PHYSICAL FUNCTION
SCORING MANUAL

A brief guide to scoring the PROMIS® 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 v2.1 - 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 Short Form v2.0 – Physical Function 24a (PROMIS HAQ)			
PROMIS Bank v2.0 – Upper Extremity			
PROMIS Short Form v2.0 – Upper Extremity 7a			

*retired measure

COMPARING SCORES ACROSS VERSIONS

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

Scores obtained from Mobility v1.2, Mobility v2.1 and Mobility v2.0 are comparable. However, because the range of function covered by v2.1 is larger, individual scores at the very high and very low end may be different. Version 2.1 is recommended over v2.0 and v1.2.

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_scoringservice) 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

Scores for Pediatric Mobility v1.0 and v2.0 are comparable.
Scores for Parent Proxy Mobility v1.0 and v2.0 are comparable.
Scores for Pediatric Upper Extremity Function v1.0 and v2.0 are comparable.
Scores for Parent Proxy Upper Extremity Function v1.0 and v2.0 are comparable.

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_scoringservice) or a data collection tool that automatically calculates scores (e.g., 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_scoringservice) 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.

A small number of items within the PROMIS Physical Function measures for adults (and in fact for other item banks as well) there are collapsed response categories. That is, two response options are associated with the same score (e.g., 1=Unable to do, 1=With much difficulty, 2=With some difficulty). This is not an error. Use the response scores that are included in the respondent-ready measure PDFs in HealthMeasures.net Search & View Measures.

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).

PROMIS HAQ: The PROMIS Short Form v2.0 - Physical Function 24a (PROMIS-HAQ) includes 24 items. Of these, 21 items contribute to a PROMIS Physical Function T-score. The first 20 items are from PROMIS Bank v2.0 – Physical Function. The PROMIS Global06 item was originally developed to be part of the PROMIS Global Health scale but was also adopted into the PROMIS Physical Function item bank. Consequently, it has item level calibrations that can contribute to the PROMIS Physical Function T-score. To use the table in this scoring manual that converts a raw response score sum to a PROMIS T-score, sum the raw response scores for the first 21 items in the 24a (PROMIS HAQ) short form. Like other short forms, all items must be answered in order to use the scoring table. If there is missing data, utilize the HealthMeasures Scoring Service. Three items from the short form do not contribute to a summary score. Global03 (In general, how would you rate your health), PFScreen (statement about use of mobility aids), and Global07 (How would you rate your pain on average) all use raw response scores only. No T-score or other summary score is produced. Their response scores should not be summed with the response scores from the Physical Function items.

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.

SCORES

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.

Standard Error (SE): A PROMIS score includes a T-score and a standard error (SE). The standard error is a measure of the variability for a given T-score across hypothetical repeated measurements. The standard error can be used to construct confidence intervals around a T-score. A 95% confidence interval is common. A 95% confidence interval means there is a 95% probability that the true T-score is within this range. The formula for a 95% confidence interval is (T-score $\pm$ (1.96*SE). For example, if T=52 and SE=2, the lower boundary of the confidence interval is (52 – (1.96*2) = 48 and the upper boundary is (52 + (1.96*2) = 56.

FREQUENTLY ASKED QUESTIONS (FAQ)

Q: I am interested in learning more. Where can I do that?
Review the HealthMeasures website at www.healthmeasures.net.

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.

APPENDIX 1-SCORING TABLES

Adult v2.0 - Physical Function 4a		
Short Form Conversion Table		
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

Adult v2.0 – Physical Function 6b		
Short Form Conversion Table		
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

Adult v2.0 – Physical Function 8b		
Short Form Conversion Table		
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

Adult v2.0 – Physical Function 20a					
Short Form Conversion Table					
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

Adult v1.0 – Physical Function 12a					
Short Form Conversion Table for People Who Can Walk (answered 12 items)					
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

Adult v1.0 – Physical Function 12a		
Short Form Conversion Table for People Who Cannot Walk (answered 6 items)		
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
11	-3.81	0.32	11.90	0.00007	34	-1.86	0.2	31.40	0.00394
12	-3.56	0.28	14.40	0.0001	35	-1.8	0.2	32.00	0.00444
13	-3.39	0.26	16.10	0.00014	36	-1.74	0.2	32.60	0.00499
14	-3.27	0.25	17.30	0.00019	37	-1.68	0.2	33.20	0.00561
15	-3.15	0.24	18.50	0.00023	38	-1.62	0.2	33.80	0.0063
16	-3.06	0.23	19.40	0.00029	39	-1.56	0.21	34.40	0.00708
17	-2.97	0.22	20.30	0.00035	40	-1.49	0.21	35.10	0.00797
18	-2.89	0.22	21.10	0.00042	41	-1.43	0.21	35.70	0.00898
19	-2.82	0.21	21.80	0.0005	42	-1.36	0.21	36.40	0.01015
20	-2.74	0.21	22.60	0.00059	43	-1.29	0.22	37.10	0.01151
21	-2.67	0.21	23.30	0.00069	44	-1.22	0.22	37.80	0.0131
22	-2.6	0.21	24.00	0.00081	45	-1.14	0.23	38.60	0.01501
23	-2.54	0.2	24.60	0.00094	46	-1.06	0.24	39.40	0.01734
24	-2.47	0.2	25.30	0.00109	47	-0.97	0.25	40.30	0.02023
25	-2.41	0.2	25.90	0.00125	48	-0.88	0.26	41.20	0.02382
26	-2.35	0.2	26.50	0.00144	49	-0.77	0.28	42.30	0.02865
27	-2.29	0.2	27.10	0.00164	50	-0.64	0.31	43.60	0.03557
28	-2.22	0.2	27.80	0.00187	51	-0.46	0.4	45.40	0.04722
29	-2.16	0.2	28.40	0.00213	52	-0.36	0.37	46.40	0.05582
30	-2.1	0.2	29.00	0.00242	53	-0.2	0.39	48.00	0.07547
31	-2.04	0.2	29.60	0.00274	54	0.04	0.41	50.40	0.12106
32	-1.98	0.2	30.20	0.0031	55	0.79	0.67	57.90	0.44923
33	-1.92	0.2	30.80	0.0035					

Adult v1.0 - Respondents Who Cannot Walk 25 Feet (answered 8 items)

Raw Summed Score	Theta Score	SD (Theta)	T-Score	Estimated Proportion
8	-3.78	0.32	12.2	0.00008
9	-3.52	0.29	14.8	0.00012
10	-3.35	0.27	16.5	0.00017
11	-3.21	0.26	17.9	0.00022
12	-3.1	0.25	19	0.00029
13	-2.99	0.25	20.1	0.00037
14	-2.9	0.24	21	0.00047
15	-2.81	0.24	21.9	0.00058
16	-2.72	0.24	22.8	0.00071
17	-2.63	0.23	23.7	0.00087
18	-2.55	0.23	24.5	0.00106
19	-2.47	0.23	25.3	0.00129
20	-2.39	0.23	26.1	0.00155
21	-2.31	0.23	26.9	0.00187
22	-2.24	0.23	27.6	0.00224
23	-2.16	0.23	28.4	0.00267
24	-2.08	0.24	29.2	0.00318
25	-2	0.24	30	0.00379
26	-1.92	0.24	30.8	0.00451
27	-1.84	0.24	31.6	0.00536
28	-1.75	0.25	32.5	0.00638
29	-1.67	0.25	33.3	0.00761
30	-1.58	0.26	34.2	0.00912
31	-1.48	0.27	35.2	0.01101
32	-1.38	0.28	36.2	0.01342
33	-1.27	0.3	37.3	0.01658
34	-1.15	0.32	38.5	0.02084
35	-1.01	0.36	39.9	0.02695
36	-0.79	0.49	42.1	0.03768
37	-0.75	0.4	42.5	0.04442
38	-0.57	0.41	44.3	0.0558
39	-0.29	0.44	47.1	0.1187
40	0.59	0.72	55.9	0.59009

Adult v2.0 Upper Extremity 7a		
Short Form Conversion Table		
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		

Adult v2.0 – Physical Function 10a		
Short Form Conversion Table		
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		

Adult v2.0 – Physical Function 10b		
Short Form Conversion Table		
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		

Adult v2.0 Physical Function 24a (PROMIS HAQ)
Short Form Conversion Table

Raw Score	T-score	SE*	Raw Score	T-score	SE*	Raw Score	T-score	SE*
21	11.3	1.1	49	24.4	1.5	77	34	1.4
22	11.5	1.2	50	24.8	1.4	78	34.4	1.4
23	11.9	1.4	51	25.1	1.4	79	34.8	1.4
24	12.3	1.6	52	25.5	1.4	80	35.2	1.4
25	12.8	1.7	53	25.8	1.4	81	35.6	1.4
26	13.4	1.8	54	26.2	1.4	82	35.9	1.5
27	14	1.9	55	26.5	1.4	83	36.4	1.5
28	14.6	1.9	56	26.9	1.4	84	36.8	1.5
29	15.3	1.9	57	27.2	1.4	85	37.2	1.5
30	15.9	1.9	58	27.6	1.4	86	37.6	1.5
31	16.5	1.9	59	27.9	1.4	87	38.1	1.5
32	17.1	1.8	60	28.2	1.4	88	38.5	1.6
33	17.6	1.8	61	28.6	1.4	89	39	1.6
34	18.2	1.7	62	28.9	1.4	90	39.5	1.6
35	18.7	1.7	63	29.2	1.4	91	40.1	1.6
36	19.1	1.7	64	29.6	1.4	92	40.6	1.7
37	19.6	1.6	65	29.9	1.4	93	41.2	1.7
38	20.1	1.6	66	30.2	1.4	94	41.9	1.8
39	20.5	1.6	67	30.6	1.4	95	42.6	1.9
40	20.9	1.6	68	30.9	1.4	96	43.4	2
41	21.3	1.6	69	31.2	1.4	97	44.3	2.1
42	21.8	1.5	70	31.6	1.4	98	45.4	2.5
43	22.1	1.5	71	31.9	1.4	99	46.7	2.8
44	22.5	1.5	72	32.3	1.4	100	48.4	3.2
45	22.9	1.5	73	32.6	1.4	101	50.8	3.7
46	23.3	1.5	74	33	1.4	102	58.1	6.5
47	23.7	1.5	75	33.3	1.4			
48	24	1.5	76	33.7	1.4			

*SE = Standard Error on T-score metric

Pediatric v2.0 – Upper Extremity 8a		
Short Form Conversion Table		
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		

Pediatric v2.0 – Mobility 8a		
Short Form Conversion Table		
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		

Parent Proxy v2.0 – Upper Extremity 8a

Short Form Conversion Table

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

Parent Proxy v2.0 – Mobility 8a

Short Form Conversion Table

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

Pediatric v1.0 – Upper Extremity 8a		
Short Form Conversion Table		
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

Pediatric v1.0 – Mobility 8a		
Short Form Conversion Table		
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

Parent Proxy v1.0 – Upper Extremity 8a		
Short Form Conversion Table		
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

Parent Proxy v1.0 – Mobility 8a		
Short Form Conversion Table		
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