ABILITY TO PARTICIPATE IN SOCIAL ROLES AND ACTIVITIES SCORING MANUAL

A brief guide to scoring the PROMIS$^{®}$ Ability to Participate in Social Roles and Activities v2.0 instruments:

ADULT
PROMIS Item Bank v2.0 – Ability to Participate in Social Roles and Activities
PROMIS Item Bank v2.0 – Ability to Participate in Social Roles and Activities (recommended)
PROMIS Item Bank v2.0 – Ability to Participate in Social Roles and Activities (screen-to-CAT)
PROMIS Short Form v2.0 – Ability to Participate in Social Roles and Activities 4a
PROMIS Short Form v2.0 – Ability to Participate in Social Roles and Activities 6a
PROMIS Short Form v2.0 – Ability to Participate in Social Roles and Activities 8a

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 20 (see all short form scoring tables in the Appendix). **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.

With the total raw score for a measure, locate the applicable score conversion table in the Appendix 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 Ability to Participate in Social Roles and Activities 8a short form, a raw score of 10 converts to a T-score of 31.3 with a standard error (SE) of 1.9 (see scoring table for the 8a short form in appendix). Thus, the 95% confidence interval around the observed score ranges from 27.6 to 35.0 (T-score $\pm$ (1.96*SE) or 31.3 $\pm$ (1.96*1.9).

CAT: A minimum number of items (e.g., 4) must be answered in order to receive a score for the Ability to Participate in Social Roles and Activities 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. The CAT will continue until either the standard error drops below a specified level (e.g., on the T-score metric 3.0), or the participant has answered the maximum number of questions (e.g., 12), whichever occurs first. For some CATs, specifically "recommended" and "screen-to-CAT" there are additional stopping rules. These include stopping when the standard error isn't improving much or if a respondent is asymptomatic. For details on the exact stopping rules for Ability to Participate in Social Roles and Activities CATs, view the Measure Differences summary.

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 Ability to Participate in Social Roles and Activities, a T-score of 60 is one SD better than average. By comparison, an Ability to Participate in Social Roles and Activities 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 (FAQs)

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—SCORING TABLES

Ability to Participate Social 4a

Short Form Conversion Table

Raw Score	Scale Score	SE*
4	27.5	4.1
5	31.8	2.5
6	34.0	2.3
7	35.7	2.2
8	37.3	2.1
9	38.8	2.2
10	40.5	2.3
11	42.3	2.3
12	44.2	2.3
13	46.2	2.3
14	48.1	2.2
15	50.0	2.2
16	51.9	2.2
17	53.7	2.3
18	55.8	2.3
19	58.3	2.7
20	64.2	5.1

*SE = Standard Error on T-score metric

Adult version

Ability to Participate Social 6a

Short Form Conversion Table

Raw Score	Scale Score	SE*
6	26.7	4.0
7	30.7	2.4
8	32.5	2.0
9	33.9	1.9
10	35.1	1.8
11	36.2	1.8
12	37.2	1.8
13	38.2	1.8
14	39.3	1.8
15	40.4	1.8
16	41.6	1.9
17	42.9	1.9
18	44.2	1.9
19	45.6	1.9
20	46.9	1.9
21	48.2	1.8
22	49.5	1.8
23	50.7	1.8
24	51.9	1.8
25	53.2	1.8
26	54.5	1.9
27	55.9	1.9
28	57.5	2.1
29	59.6	2.6
30	65.0	4.9

*SE = Standard Error on T-score metric

Ability to Participate Social 8a

Short Form Conversion Table

Raw Score	Scale Score	SE*
8	25.9	3.9
9	29.7	2.3
10	31.3	1.9
11	32.6	1.7
12	33.6	1.6
13	34.5	1.6
14	35.3	1.5
15	36.2	1.5
16	36.9	1.5
17	37.7	1.5
18	38.5	1.5
19	39.3	1.6
20	40.2	1.6
21	41.1	1.6
22	42.0	1.7
23	43.0	1.7
24	44.0	1.7
25	45.0	1.7
26	46.0	1.6
27	47.0	1.6
28	48.0	1.6
29	48.9	1.6
30	49.9	1.6
31	50.8	1.6
32	51.7	1.6
33	52.7	1.6
34	53.6	1.6
35	54.6	1.6
36	55.7	1.6
37	56.8	1.7
38	58.2	2.0
39	60.2	2.5
40	65.4	4.9

*SE = Standard Error on T-score metric

Adult version