

ITCH

SCORING MANUAL

A brief guide scoring to the PROMIS® Itch instruments:

ADULT	PEDIATRIC	PARENT PROXY
PROMIS Item Bank v1.0 – Itch – Activity and Clothing	PROMIS Pediatric Bank v1.0 – Itch (PIQ-C)	PROMIS Parent Proxy Bank v1.0 – Itch
PROMIS Item Bank v1.0 – Itch – Interference	PROMIS Pediatric Bank v1.0 – Itch (PIQ-C) (screen-to-CAT)	PROMIS Parent Proxy Bank v1.0 – Itch (screen-to-CAT)
PROMIS Item Bank v1.0 – Itch – Mood and Sleep	PROMIS Pediatric Short Form v1.0 – Itch 6a (PIQ-C)	PROMIS Parent Proxy Short Form v1.0 – Itch 6a
PROMIS Item Pool v1.1 – Itch – Severity	PROMIS Pediatric Short Form v1.0 – Itch 8a (PIQ-C)	PROMIS Parent Proxy Short Form v1.0 – Itch 8a
PROMIS Checklist v1.0 – Itch – Quality	PROMIS Pediatric Short Form v1.0 – Itch 8b (PIQ-C)	PROMIS Parent Proxy Short Form v1.0 – Itch 8b
PROMIS Checklist v1.0 – Itch – Triggers	PROMIS Pediatric Numeric Rating Scale v1.0 – Itch (PIQ-C) 3a	PROMIS Parent Proxy Numeric Rating Scale v1.0 – Itch 3a
PROMIS Scale v1.0 – Itch – Scratching Behavior 5a		
PROMIS Short Form v1.0 – Itch – Activity and Clothing 4a		
PROMIS Short Form v1.0 – Itch – Interference 4a		
PROMIS Short Form v1.0 – Itch – Mood and Sleep 4a		
PROMIS Short Form v1.0 – Itch – Activity and Clothing 8a		
PROMIS Short Form v1.0 – Itch – Interference 8a		
PROMIS Short Form v1.0 – Itch – Mood and Sleep 8a		
PROMIS Item Pool v1.0 – Itch – Severity*		

*Retired measure

PIQ-C = PROMIS Itch Questionnaire–Child

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

There is only one version (v1.0) of Itch item banks, short forms, checklists, and scales for adults. Consequently, comparison of scores across versions is not relevant.

There is one exception; there are two versions (v1.0 and v1.1) of the PROMIS Adult Itch-Severity Item Pool. Two items (Item IDs PIQSeverity06 and PIQSeverity07) from the PROMIS Item Pool v1.0 – Itch-Severity were revised to address a timeframe contradiction between the item contexts (e.g., recall period) and item stems (see Itch Measure Differences summary for more details). As a result, there is a second version of this instrument (PROMIS Item Pool v1.1 – Itch-Severity). Item pools do not produce summary scores. However, you can compare

raw response scores from items in the v1.0 Pool with items from the v1.1 Pool with the exception of items PIQSeverity06/PIQSeverity06r and PIQSeverity07/PIQSeverity07r.

Pediatric and Parent Proxy

There is only one version (v1.0) of the Pediatric and Parent Proxy Itch instruments. Consequently, comparison of scores across versions is not relevant.

SCORING THE INSTRUMENT

Short Forms: PROMIS item banks, short forms, and scales are scored using item-level calibrations. Thus, the most accurate way to score a PROMIS instrument is to use the HealthMeasures Scoring Service (https://www.assessmentcenter.net/ac_scoringervice) 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 of the scored questions 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 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_scoringervice) 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 Itch-Activity and Clothing 4a short form, a raw score of 10 converts to a T-score of 47.2 with a standard error (SE) of 2.7 (see scoring table for the 4a short form in the Appendix). Thus, the 95% confidence interval around the observed score ranges from 41.9 to 52.5 (T-score $\pm$ (1.96*SE) or 47.2 $\pm$ (1.96*2.7)).

Pools, Checklists, and Numeric Rating Scales: These measures do not produce summary scores. Use the raw item-level response scores.

CAT: A minimum number of items (e.g., 4) must be answered in order to receive a score for the Itch 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., 8), 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 Itch CATs, view the Measure Differences summary.

SCORES

For the PROMIS itch instruments, a score of 50 is the average score for people in the United States general population who have recently experienced itch for any reason. The standard deviation around this mean of 50 is 10 T-score units. 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 negatively-worded concepts like Itch, a T-score of 60 is one SD worse than average (i.e., mean of the referenced group). By comparison, an Itch T-score of 40 is one SD better than average (i.e., mean of the referenced group).

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 $(T\text{-score} \pm (1.96 * SE))$. 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?

The best place to start is the HealthMeasures website at www.healthmeasures.net. The site contains a wealth of educational information and citations for further reading.

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 v1.0 – Itch – Scratching Behavior 5a		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-score	SE*
5	30.4	5.1
6	35.0	3.8
7	37.8	3.4
8	40.0	3.0
9	41.9	2.8
10	43.6	2.7
11	45.0	2.6
12	46.5	2.6
13	47.8	2.6
14	49.2	2.6
15	50.5	2.6
16	51.8	2.6
17	53.2	2.6
18	54.6	2.6
19	56.0	2.6
20	57.4	2.7
21	59.0	2.8
22	60.7	2.9
23	62.8	3.1
24	65.3	3.5
25	69.8	4.8
*SE = Standard Error on T-score metric		

Adult v1.0 - Itch – Activity & Clothing 4a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
4	32.4	5.0
5	37.2	3.5
6	39.6	3.3
7	41.8	2.9
8	43.7	2.8
9	45.5	2.7
10	47.2	2.7
11	49.0	2.7
12	50.9	2.7
13	52.7	2.7
14	54.5	2.7
15	56.3	2.7
16	58.2	2.7
17	60.1	2.7
18	62.3	2.9
19	65.0	3.1
20	69.9	4.5
*SE = Standard Error on T-score metric		

Adult v1.0 – Itch – Activity & Clothing 8a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
8	31.2	4.7
9	35.6	3.2
10	37.5	2.8
11	39.1	2.4
12	40.5	2.2
13	41.6	2.1
14	42.6	2.0
15	43.6	1.9
16	44.5	1.9
17	45.4	1.9
18	46.3	1.9
19	47.2	1.9
20	48.1	1.9
21	49.0	1.9
22	49.9	1.9
23	50.8	1.9
24	51.7	1.9
25	52.6	1.9
26	53.5	1.9
27	54.4	1.9
28	55.3	1.9
29	56.3	1.9
30	57.2	1.9
31	58.2	1.9
32	59.1	1.9
33	60.1	1.9
34	61.1	2.0
35	62.2	2.0
36	63.4	2.1
37	64.7	2.2
38	66.3	2.5
39	68.3	2.9
40	72.2	4.3
*SE = Standard Error on T-score metric		

Adult v1.0 - Itch – Interference 4a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
4	35.8	7.4
5	39.5	6.9
6	41.0	6.9
7	42.3	6.9
8	43.4	7.2
9	45.7	6.8
10	47.0	6.8
11	48.4	6.8
12	50.0	7.0
13	51.6	6.8
14	53.0	6.8
15	54.3	6.8
16	56.6	7.2
17	57.7	6.9
18	59.0	6.9
19	60.5	6.9
20	64.2	7.4
*SE = Standard Error on T-score metric		

Adult v1.0 - Itch – Interference 8a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
8	32.7	4.8
9	37.5	3.0
10	39.7	2.7
11	41.3	2.4
12	42.6	2.2
13	43.8	2.1
14	44.8	2.0
15	45.7	2.0
16	46.7	1.9
17	47.5	1.9
18	48.4	1.9
19	49.2	1.9
20	50.0	1.9
21	50.8	1.9
22	51.6	1.9
23	52.4	1.9
24	53.2	1.9
25	54.0	1.9
26	54.9	1.9
27	55.7	1.9
28	56.5	1.9
29	57.3	1.9
30	58.2	1.9
31	59.0	1.9
32	59.9	1.9
33	60.8	1.9
34	61.8	1.9
35	62.8	2.0
36	63.9	2.1
37	65.1	2.2
38	66.6	2.4
39	68.5	2.8
40	72.5	4.3
*SE = Standard Error on T-score metric		

Adult v1.0 - Itch – Mood & Sleep 4a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
4	30.2	4.7
5	35.0	3.3
6	37.6	3.1
7	39.8	2.9
8	41.7	2.9
9	43.6	2.9
10	45.4	2.9
11	47.2	2.9
12	49.0	2.9
13	50.8	2.9
14	52.7	2.9
15	54.6	2.9
16	56.5	3.0
17	58.6	3.0
18	60.9	3.3
19	63.6	3.5
20	68.5	4.9
*SE = Standard Error on T-score metric		

Adult v1.0 - Itch – Mood & Sleep 8a		
Short Form Conversion Table		
Raw Summed Score	T-score	SE*
8	28.5	4.5
9	32.6	3.1
10	34.6	2.8
11	36.2	2.5
12	37.5	2.4
13	38.7	2.3
14	39.7	2.2
15	40.7	2.2
16	41.7	2.2
17	42.6	2.2
18	43.6	2.2
19	44.5	2.2
20	45.4	2.2
21	46.3	2.2
22	47.3	2.2
23	48.2	2.2
24	49.1	2.2
25	50.1	2.2
26	51.0	2.2
27	52.0	2.2
28	53.0	2.2
29	54.0	2.2
30	55.0	2.2
31	56.0	2.2
32	57.0	2.2
33	58.0	2.2
34	59.1	2.3
35	60.2	2.3
36	61.5	2.4
37	62.9	2.6
38	64.6	2.8
39	66.7	3.2
40	70.9	4.6
*SE = Standard Error on T-score metric		

PROMIS Pediatric Short Form v1.0 – Itch 6a (PIQ-C)		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-Score	SE*
6	44	7.6
7	53	5.7
8	57	5.4
9	60	4.9
10	63	4.6
11	65	4.2
12	67	3.8
13	69	3.6
14	71	3.5
15	72	3.4
16	74	3.3
17	75	3.2
18	77	3.2
19	78	3.2
20	79	3.2
21	81	3.2
22	82	3.2
23	84	3.2
24	85	3.1
25	87	3.1
26	88	3.0
27	90	2.9
28	91	2.7
29	92	2.4
30	93	2.0

*SE = Standard Error on T-score metric

PROMIS Pediatric Short Form v1.0 – Itch 8a (PIQ-C)		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-Scores	SE*
8	44	7.5
9	52	5.5
10	56	5.1
11	59	4.6
12	61	4.2
13	63	3.8
14	65	3.4
15	67	3.2
16	68	3.0
17	69	2.9
18	71	2.8
19	72	2.8
20	73	2.7
21	74	2.7
22	75	2.7
23	76	2.7
24	77	2.7
25	78	2.7
26	79	2.7
27	80	2.7
28	81	2.7
29	82	2.7
30	83	2.7
31	85	2.6
32	86	2.6
33	87	2.6
34	88	2.6
35	89	2.6
36	90	2.5
37	91	2.4
38	92	2.2
39	93	1.9
40	94	1.6

*SE = Standard Error on T-score
metric

PROMIS Pediatric Short Form v1.0 – Itch 8b (PIQ-C)		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-Score	SE*
8	44	7.5
9	52	5.5
10	56	5.1
11	59	4.6
12	61	4.3
13	63	3.9
14	65	3.6
15	67	3.4
16	68	3.3
17	70	3.2
18	71	3.1
19	72	3.0
20	73	3.0
21	74	2.9
22	75	2.9
23	76	2.9
24	78	2.9
25	79	2.9
26	80	2.9
27	81	2.9
28	82	2.9
29	83	2.9
30	84	2.8
31	85	2.8
32	86	2.8
33	87	2.8
34	88	2.8
35	89	2.7
36	91	2.6
37	92	2.4
38	93	2.2
39	93	1.9
40	94	1.6

*SE = Standard Error on T-score metric

PROMIS Parent Proxy Short Form v1.0 – Itch 6a		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-Score	SE*
8	49.3	9.5
9	63.3	8.1
10	68.5	8.6
11	73.0	8.5
12	76.4	8.8
13	81.3	6.6
14	84.7	5.7
15	87.3	5.0
16	89.3	4.3
17	90.8	3.7
18	91.9	3.1
19	92.6	2.7
20	93.1	2.3
21	93.5	2.1
22	93.8	1.8
23	94.0	1.7
24	94.1	1.5
25	94.2	1.4
26	94.3	1.3
27	94.4	1.2
28	94.4	1.2
29	94.5	1.1
30	94.5	1.1
31	94.5	1.0
32	94.5	1.0

*SE = Standard Error on T-score
metric

PROMIS Parent Proxy Short Form v1.0 – Itch 8a		
<i>Short Form Conversion Table</i>		
Raw Summed Score	T-Score	SE*
8	49.3	9.5
9	63.2	8.0
10	68.3	8.3
11	72.9	8.1
12	76.4	8.0
13	80.8	6.0
14	83.8	5.1
15	86.2	4.5
16	88.1	4.0
17	89.7	3.6
18	91.0	3.1
19	92.0	2.8
20	92.7	2.4
21	93.2	2.1
22	93.6	1.9
23	93.9	1.6
24	94.1	1.5
25	94.3	1.3
26	94.4	1.2
27	94.5	1.1
28	94.5	1.0
29	94.6	0.9
30	94.7	0.9
31	94.7	0.8
32	94.7	0.8
33	94.7	0.7
34	94.8	0.7
35	94.8	0.7
36	94.8	0.6
37	94.8	0.6
38	94.8	0.6
39	94.8	0.6
40	94.8	0.6

*SE = Standard Error on T-score
metric

PROMIS Parent Proxy Short Form v1.0 – Itch 8b		
Short Form Conversion Table		
Raw Summed Score	T-Score	SE*
8	49.3	9.5
9	63.2	8.0
10	68.2	8.3
11	72.8	8.0
12	76.3	8.0
13	80.6	6.0
14	83.5	5.2
15	85.9	4.7
16	87.8	4.2
17	89.4	3.8
18	90.6	3.4
19	91.6	3.0
20	92.3	2.7
21	92.9	2.4
22	93.3	2.1
23	93.6	1.9
24	93.8	1.7
25	94.0	1.6
26	94.2	1.4
27	94.3	1.3
28	94.4	1.2
29	94.5	1.1
30	94.5	1.1
31	94.6	1.0
32	94.6	0.9
33	94.7	0.9
34	94.7	0.8
35	94.7	0.8
36	94.7	0.8
37	94.8	0.7
38	94.8	0.7
39	94.8	0.7
40	94.8	0.7

*SE = Standard Error on T-score
metric