PAIN INTENSITY
SCORING MANUAL

A brief guide to scoring the PROMIS® Pain Intensity instruments:

ADULT	PEDIATRIC	PARENT PROXY
PROMIS Numeric Rating Scale v1.0 – Pain Intensity 1a PROMIS Scale v1.0 - Pain Intensity 3a* PROMIS Scale v2.0 - Pain Intensity 3a	PROMIS Numeric Rating Scale v1.0 – Pediatric Pain Intensity 1a	PROMIS Numeric Rating Scale v1.0 – Parent Proxy Pain Intensity 1a

*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.

There are multiple versions of the adult PROMIS Pain Intensity 3a scale. The v2.0 item scale is the most current scale and the preferred version. The v2.0 item scale includes the same items as the v1.0 scale, but uses revised item-level calibrations. This means that the T-scores in v2.0 are calculated differently from v1.0. Scores between the two versions cannot be directly compared. In v2.0, a T-score of 50 represents an estimate of average of the general population (with 10 an estimate of the SD in the general population). In v1.0, a T-score of 50 represents the average of people with at least mild pain. This means that a score of 50 on v2.0 reflects a lower level of pain compared to a 50 on v1.0. Because the items are identical, you can re-score the v1.0 scale either by a) using the scoring table at the end of this manual or b) using the HealthMeasures Scoring Service and selecting “PROMIS Scale v2.0 - Pain Intensity 3a.”

SCORING THE INSTRUMENT

Most PROMIS instruments including PROMIS Scale v1.0 and v2.0 - Pain Intensity 3a are scored using item-level calibrations. This means that the most accurate way to score a PROMIS instrument is to utilize scoring tools within a data collection platform that looks at responses to each item for each participant (e.g., REDCap Auto-Score, PROMIS iPad App). Data collected in these platforms will automatically score in this way. We refer to this as “response pattern scoring.” Response pattern scoring can be used when data was collected on paper or in another assessment software package through the HealthMeasures Scoring Service. Because response pattern scoring is more accurate than the use of raw score/scale score look up tables, it is preferred. However, if you aren’t able to use response pattern scoring, you can use the instructions below which rely on raw score/scale score look-up tables.

Within the adult PROMIS Pain Intensity 3a scales, each question has five response options ranging in value from one to five. To find the total raw score for the short form, sum the values of the response to each question. For example, the lowest possible raw score is 3; the highest possible raw score is 15 (see all scale scoring tables in Appendix). All questions must be answered in order to produce a valid score.

For PROMIS Scale v2.0 Pain Intensity 3a, a raw score of 10 converts to a T-score of 64.9 with a standard error (SE) of 3.9 (see scoring table for v2.0 in the appendix). Thus, the 95% confidence interval around the observed score ranges from 57.3 to 72.5 (T-score ± (1.96*SE) or 64.9 ± (1.96*3.9).

The Numeric Rating Scale measures (adult, pediatric, parent proxy) each consist of a single item rating pain on average over the past 7 days from 0 (no pain) to 10 (worst pain you can think of). The items are not calibrated and do not produce a T-score. Instead, raw response scores (0 to 10) should be used for analyses.

SCORES

For most PROMIS instruments, a score of 50 is typically 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. 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 Pain Intensity, a T-score of 60 is one SD worse than average. By comparison, a Pain Intensity T-score of 40 is one SD better 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 ± (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.

Scoring Numeric Rating Scales

The PROMIS Numeric Rating Scales for pain intensity do not produce a T-score or other summary score. Raw response scores (0 to 10) should be used for all analyses.

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 1 - SCORING TABLE

PROMIS Adult v2.0 Pain Intensity 3a *Short Form Conversion Table*		
Raw Summed Score	T-score	SE
3	36.3	5.4
4	43.1	3.9
5	47.5	3.7
6	51.4	3.8
7	54.8	3.9
8	58.5	3.9
9	61.9	3.8
10	64.9	3.9
11	68.4	4.1
12	72.0	4.2
13	75.1	4.8
14	77.8	5.0
15	81.8	4.2
*SE = Standard Error on T-score metric		

APPENDIX 2 - SCORING TABLE FOR RETIRED MEASURE

Because the PROMIS Scale v2.0 – Pain Intensity 3a is an improvement over past versions, we recommend re-scoring v1.0 using the v2.0 metric. To do that, sum the raw score responses to all three items and look up the corresponding T-score using the v2.0 table. DO NOT combine scores on the v1.0 metric with scores on the v2.0 metric.

Adult v1.0 - Pain Intensity 3a		
Short Form Conversion Table		
Raw Summed Score	T-Score	SE*
3	30.7	4.5
4	36.3	3.1
5	40.2	3.0
6	43.5	3.0
7	46.3	3.0
8	49.4	2.9
9	52.1	2.8
10	54.5	2.9
11	57.5	3.1
12	60.5	3.1
13	64.1	3.8
14	67.4	4.2
15	71.8	5.0
*SE = Standard Error on T-score metric		