## GENERAL SELF-EFFICACY AND SELF-EFFICACY FOR MANAGING CHRONIC CONDITIONS

A brief guide to the PROMIS® Self-Efficacy Instruments

#### **ADULT**

PROMIS Item Bank v1.0 – General Self-Efficacy
PROMIS Short Form v1.0 – General Self-Efficacy 4a

PROMIS Item Bank v1.0 – Self-Efficacy for Managing Emotions PROMIS Short Form v1.0 – Self-Efficacy for Managing Emotions 4a PROMIS Short Form v1.0 – Self-Efficacy for Managing Emotions 8a

PROMIS Item Bank v1.0 – Self-Efficacy for Managing Symptoms PROMIS Short Form v1.0 – Self-Efficacy for Managing Symptoms 4a PROMIS Short Form v1.0 – Self-Efficacy for Managing Symptoms 8a

PROMIS Item Bank v1.0 – Self-Efficacy for Managing Daily Activities PROMIS Short Form v1.0 – Self-Efficacy for Managing Daily Activities 4a PROMIS Short Form v1.0 – Self-Efficacy for Managing Daily Activities 8a

PROMIS Item Bank v1.0 – Self-Efficacy for Managing Social Interactions PROMIS Short Form v1.0 – Self-Efficacy for Managing Social Interactions 4a PROMIS Short Form v1.0 – Self-Efficacy for Managing Social Interactions 8a

PROMIS Item Bank v1.0 – Self-Efficacy for Managing Medications and Treatments PROMIS Short Form v1.0 – Self-Efficacy for Managing Medications and Treatments 4a PROMIS Short Form v1.0 – Self-Efficacy for Managing Medications and Treatments 8a

#### ABOUT SELF-EFFICACY

**Self-efficacy** is defined as confidence in one's ability to successfully perform specific tasks or behaviors. **Self-Efficacy for Managing Chronic Conditions** assesses confidence in one's ability to successfully perform specific tasks or behaviors related to one's health in a variety of situations. Several domains of Self-Efficacy for Managing Chronic Conditions relate to specific aspects of managing chronic conditions.

**Self-Efficacy for Managing Chronic Conditions – Manage Daily Activities**: Confidence in performing various activities of daily living without assistance. Items also assess exercise, sexual activities and managing activities in challenging situations (travelling, bad weather).

**Self-Efficacy for Managing Chronic Conditions – Manage Emotions**: Confidence to manage/control symptoms of anxiety, depression, helplessness, discouragement, frustration, disappointment and anger.

**Self-Efficacy for Managing Chronic Conditions – Manage Medications/Treatment**: Confidence in managing medication schedules of different complexity. Managing medication and other treatments in challenging situations such as when travelling, when running out of medication, and when adverse effects are encountered.

**Self-Efficacy for Managing Chronic Conditions – Manage Social Interactions**: Confidence in participating in social activities and getting help when necessary. Managing communication with others about their medical condition, including communication with health professionals.

10/25/2017 PROMIS - Gen. Self-Efficacy & Self-Efficacy for Man. Chronic Conditions Page 1

**Self-Efficacy for Managing Chronic Conditions – Manage Symptoms**: Confidence to manage/control their symptoms, to manage their symptoms in different settings and to keep symptoms from interfering with work, sleep, relationships or recreational activities.

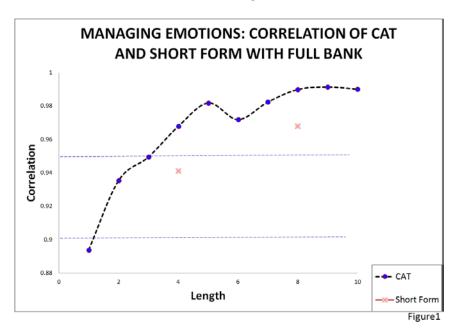
The Self-Efficacy item banks are universal rather than disease-specific. The respondent should be an adult (age 18+) and have at least one chronic health condition. The PROMIS Adult Self-Efficacy items banks have been modified from the NIH Toolbox Self-Efficacy item bank.

#### INTRODUCTION TO ASSESSMENT OPTIONS

There are two options for administration of the self-efficacy item banks: <u>short forms</u> and <u>computer adaptive</u> <u>tests (CATs)</u>. When administering a short form, instruct participants to answer all of the items (i.e., questions or statements) presented. With the CAT, the participant's responses guide the system's choice of subsequent items from the full item bank (ranging from 10 to 35 items for each item bank). Although items differ across

respondents taking the CAT, scores are comparable across participants. Some investigators may prefer to ask the same questions of all respondents or of the same respondent over time, to enable more direct comparability across people or time. In these cases, or when paper administration is preferred, a short form would be more desirable than the CAT. This guide provides information on all of the self-efficacy short forms 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 an underlying trait or



concept of self-efficacy represented by all items in the item bank. When choosing between a CAT versus 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 Self-Efficacy for Managing Emotions full item bank with a) the CAT of varying lengths and b) two short forms. The figures of five item banks are presented in Appendix I. 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 the CAT to choose more informative questions offers more precision.

#### SHORT FORM DIFFERENCES

#### **SELECTING A SELF-EFFICACY MEASURE**

When selecting a self-efficacy measure, identify if you need a global evaluation of self-efficacy (Self-Efficacy: General) or if you are interested in self-efficacy related to managing one's health (Self-Efficacy for Managing Chronic Conditions). If the latter, you will need to identify the specific aspect of managing a health condition that is of interest (e.g., medications, treatment, symptoms, daily activities, emotions, social interactions).

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).

#### SCORING THE INSTRUMENT

The 10-item PROMIS General Self-Efficacy item bank includes all 10 items from the NIH Toolbox Self-Efficacy item bank in a modified form. The NIH Toolbox items focus on one's ability with frequency response options (e.g., "I can manage to solve difficult problems if I try hard enough." Responses: Never – Very Often). The PROMIS items focus on one's confidence with options asking respondents how confident they are (e.g., "It is easy for me to stick to my aims and accomplish my goals." Responses: I am not at all confident – I am very confident). This approach was consistent with theory and qualitative input from patients and content experts.

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 (<a href="https://www.assessmentcenter.net/ac\_scoringservice">https://www.assessmentcenter.net/ac\_scoringservice</a>) 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 II). 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 (<a href="https://www.assessmentcenter.net/ac\_scoringservice">https://www.assessmentcenter.net/ac\_scoringservice</a>) to generate a final score.

With the total raw score for a measure, locate the applicable score conversion table in Appendix II 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 PROMIS Self-Efficacy 8-item short form for Managing Emotions, a raw score of 10 converts to a T-score of 27.82 with a standard error (SE) of 2.65 (see scoring table for the 8-item short form of the construct of Managing Emotions in Appendix II). The scoring tables of all constructs are presented in Appendix II. Thus, the 95% confidence interval around the observed score ranges from 22.62 to 33.01 (T-score  $\pm$  (1.96\*SE) or 27.82  $\pm$  (1.96\*2.65).

<u>CAT</u>: A minimum number of items (4) must be answered in order to receive a score for a Self-Efficacy CAT. The first item is selected because it provides the most information about people with chronic conditions. The response to this item will guide the system's choice of the next item for the participant. The participant's response to this 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, 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 (<a href="http://www.healthmeasures.net/score-and-interpret/interpret-scores/promis">http://www.healthmeasures.net/score-and-interpret/interpret-scores/promis</a>). 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.

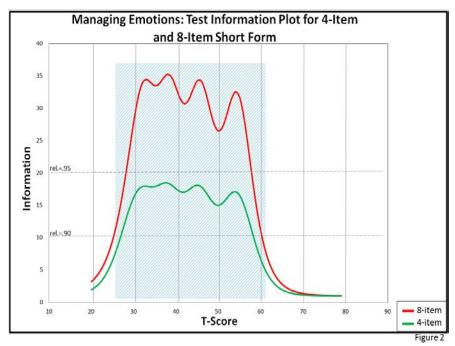
<u>Important:</u> A higher PROMIS T-score represents more of the concept being measured. For example, a T-score of 55 on the PROMIS Self-Efficacy for Managing Emotions indicates that the respondent has greater self-efficacy for managing their emotions than the general chronic condition population (half a standard deviation higher).

#### STATISTICAL CHARACTERISTICS

There are four key features of the score for self-efficacy:

- **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<sup>2</sup>).
- **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<sup>2</sup>).
- 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** (4-item and 8-item short forms for Managing Emotions), the two dotted horizontal lines each represent a degree of internal consistency 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 8-item form. Figure 2 also tells us where on the scale the form is most informative based upon the T-score. This form would typically be more informative than a short form with fewer items.

**Figure 2** (4-item and 8-item short forms for Managing Emotions) also tells us where on the scale the form is most informative based upon the T-score: the 8-item short form is more informative than the 4-item form.

The information plots of the domains are provided in Appendix III.

**Figure 3** is a sample of the statistical information for the Managing Emotions CAT. More information is available at HealthMeasures.net.

Scaling	g Mode	l Used F	or Calik	ration	Grad	ded Respoi	nse Mo	del (GRI	<b>√</b> 1)			
Total N	lumbe	r of Iten	าร		25							
Sample	e				N	Alpha Re	liability					
PROM	IS Wav	e 1 Full (	Bank	~	1070	0.978						
					Sco	re Distribu	ıtions					
	Mear	s SD	P	5	P10	P25	P5	0	P75	P90	P9	5
				-		40.50	7.5	00	100.50	115.8	20 12	0.90
Raw	75.00	29.3	0 2	9.10	34.20	49.50	75	.00	100.50	115.0	50   12	0.90
Raw Scale	75.00 42.00	_			34.20 28.38	34.04	41		29.88	56.09		.71
							_			_		
							_			_		
	42.00					34.04	_			_	9 59	.71
Scale	42.00	10.5	2 2	5.13	28.38	34.04	41	.67	29.88	56.09	59 Min	.71

#### **PREVIEW OF SAMPLE ITEM**

**Figure 4** is an excerpt from the paper version of the eight-item self-efficacy short form for Managing Emotions. This is the paper version format used for all self-efficacy instruments. It is important to note, CAT is not available for paper administration.

	In the past 7 days					
		Never	Rarely	Sometimes	Often	Always
EDDEP64	I felt worthless		2		4	5
ECCEPOS	I felt that I had nothing to look forward	<sub>-</sub>		o o	_	_

Figure 4

#### 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: 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 (<u>www.healthmeasures.net</u>) 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 an item bank. This can be scored using the Scoring Service (https://www.assessmentcenter.net/ac scoringservice).

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.

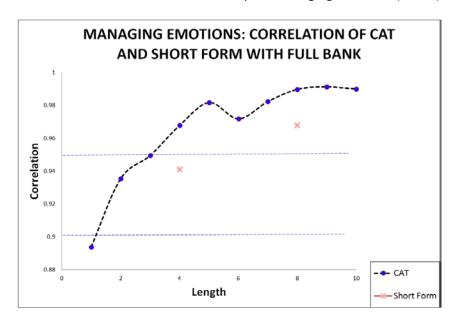
Q: What is the minimum change on a PROMIS instrument that represents a clinically meaningful difference?

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 (<a href="http://www.healthmeasures.net/score-and-interpret/interpret-scores/promis">http://www.healthmeasures.net/score-and-interpret/interpret-scores/promis</a>) has additional information on interpreting scores.

## APPENDIX I. FIGURES SHOWING CORRELATION BETWEEN CAT VS. FULL ITEM BANK AND SHORT FORM VS. FULL ITEM BANK

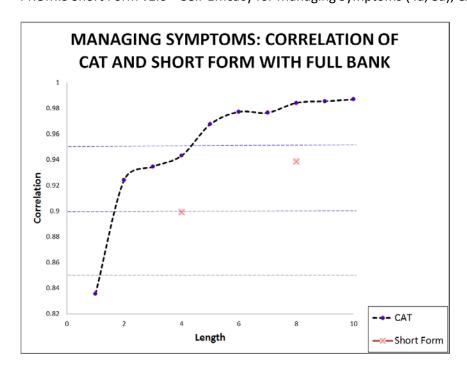
#### **MANAGING EMOTIONS**

PROMIS Short Form v1.0 - Self-Efficacy for Managing Emotions (4a, 8a), CAT and Full Bank



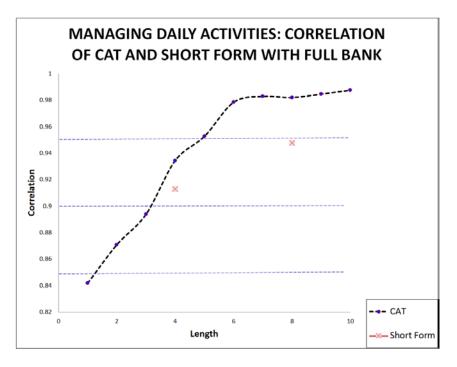
### **MANAGING SYMPTOMS**

PROMIS Short Form v1.0 – Self-Efficacy for Managing Symptoms (4a, 8a), CAT and Full Bank



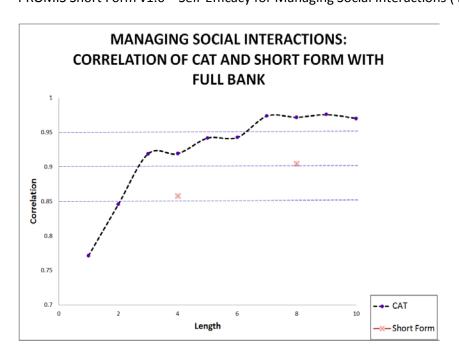
#### **MANAGING DAILY ACTIVITIES**

PROMIS Short Form v1.0 – Self-Efficacy for Managing Daily Activities (4a, 8a), CAT and Full Bank



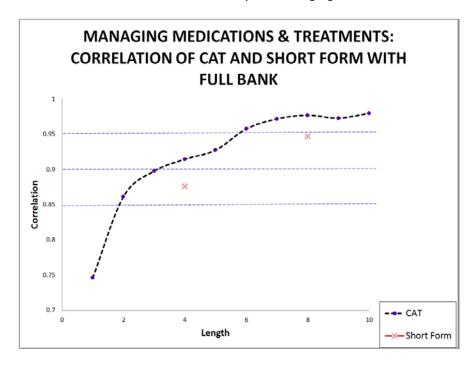
### **MANAGING SOCIAL INTERACTIONS**

PROMIS Short Form v1.0 - Self-Efficacy for Managing Social Interactions (4a, 8a), CAT and Full Bank



#### **MANAGING MEDICATIONS AND TREATMENTS**

PROMIS Short Form v1.0 – Self-Efficacy for Managing Medications and Treatments (4a, 8a), CAT and Full Bank



#### **APPENDIX II-SCORING TABLES**

## PROMIS SHORT FORM V1.0 – GENERAL SELF-EFFICACY 4A

GENERAL SELF-EFFICACY					
4-Item Short Form Short Form Conversion Table					
Raw Score	T-score	SE*			
4	18.6	3.8			
5	22.2	3.7			
6	25.3	3.6			
7	28.1	3.6			
8	30.6	3.5			
9	32.9	3.5			
10	35.3	3.5			
11	37.5	3.5			
12	39.7	3.5			
13	42.0	3.5			
14	44.4	3.5			
15	46.9	3.6			
16	49.5	3.6			
17	52.2	3.6			
18	55.3	3.7			
19	58.9	4.1			
20	64.7	5.5			

<sup>\*</sup>SE=Standard Error on T-score metric

## PROMIS SHORT FORM V1.0 – SELF-EFFICACY FOR MANAGING EMOTIONS 4A & 8A

8-Item Short Form Conversion Table           Raw Score         T-score         SE*           8         22.72         4.05           9         26.01         2.99           10         27.82         2.65           11         29.34         2.35           12         30.63         2.14           13         31.77         2.01           14         32.81         1.94           15         33.78         1.90           16         34.70         1.87           17         35.59         1.86           18         36.47         1.86           19         37.35         1.87           20         38.25         1.89           21         39.15         1.90           22         40.06         1.91           23         40.97         1.92           24         41.88         1.92           25         42.79         1.92           26         43.72         1.93           27         44.68         1.93           28         45.67         1.95           29         46.69         1.97           30	MANAGING EMOTIONS					
Raw Score         T-score         SE*           8         22.72         4.05           9         26.01         2.99           10         27.82         2.65           11         29.34         2.35           12         30.63         2.14           13         31.77         2.01           14         32.81         1.94           15         33.78         1.90           16         34.70         1.87           17         35.59         1.86           18         36.47         1.86           19         37.35         1.87           20         38.25         1.89           21         39.15         1.90           22         40.06         1.91           23         40.97         1.92           24         41.88         1.92           25         42.79         1.92           26         43.72         1.93           27         44.68         1.93           28         45.67         1.95           29         46.69         1.97           30         47.72         1.98           3	8-Item Short Form					
8       22.72       4.05         9       26.01       2.99         10       27.82       2.65         11       29.34       2.35         12       30.63       2.14         13       31.77       2.01         14       32.81       1.94         15       33.78       1.90         16       34.70       1.87         17       35.59       1.86         18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00						
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10       27.82       2.65         11       29.34       2.35         12       30.63       2.14         13       31.77       2.01         14       32.81       1.94         15       33.78       1.90         16       34.70       1.87         17       35.59       1.86         18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00 <t< td=""><td></td><td></td><td></td></t<>						
11       29.34       2.35         12       30.63       2.14         13       31.77       2.01         14       32.81       1.94         15       33.78       1.90         16       34.70       1.87         17       35.59       1.86         18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20 <t< td=""><td></td><td></td><td></td></t<>						
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13       31.77       2.01         14       32.81       1.94         15       33.78       1.90         16       34.70       1.87         17       35.59       1.86         18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54						
14       32.81       1.94         15       33.78       1.90         16       34.70       1.87         17       35.59       1.86         18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54						
15       33.78       1.90         16       34.70       1.87         17       35.59       1.86         18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54						
16       34.70       1.87         17       35.59       1.86         18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54						
17       35.59       1.86         18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54						
18       36.47       1.86         19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54						
19       37.35       1.87         20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54						
20       38.25       1.89         21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54						
21       39.15       1.90         22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	19	37.35				
22       40.06       1.91         23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	20	38.25	1.89			
23       40.97       1.92         24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	21	39.15	1.90			
24       41.88       1.92         25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	22	40.06	1.91			
25       42.79       1.92         26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	23	40.97	1.92			
26       43.72       1.93         27       44.68       1.93         28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	24	41.88	1.92			
27     44.68     1.93       28     45.67     1.95       29     46.69     1.97       30     47.72     1.98       31     48.76     2.00       32     49.81     2.00       33     50.89     2.00       34     52.01     1.99       35     53.20     2.00       36     54.47     2.06       37     55.87     2.20       38     57.55     2.54	25	42.79	1.92			
28       45.67       1.95         29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	26	43.72	1.93			
29       46.69       1.97         30       47.72       1.98         31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	27	44.68	1.93			
30     47.72     1.98       31     48.76     2.00       32     49.81     2.00       33     50.89     2.00       34     52.01     1.99       35     53.20     2.00       36     54.47     2.06       37     55.87     2.20       38     57.55     2.54	28	45.67	1.95			
31       48.76       2.00         32       49.81       2.00         33       50.89       2.00         34       52.01       1.99         35       53.20       2.00         36       54.47       2.06         37       55.87       2.20         38       57.55       2.54	29	46.69	1.97			
32     49.81     2.00       33     50.89     2.00       34     52.01     1.99       35     53.20     2.00       36     54.47     2.06       37     55.87     2.20       38     57.55     2.54	30	47.72	1.98			
33     50.89     2.00       34     52.01     1.99       35     53.20     2.00       36     54.47     2.06       37     55.87     2.20       38     57.55     2.54	31	48.76	2.00			
34     52.01     1.99       35     53.20     2.00       36     54.47     2.06       37     55.87     2.20       38     57.55     2.54	32	49.81	2.00			
35     53.20     2.00       36     54.47     2.06       37     55.87     2.20       38     57.55     2.54	33	50.89	2.00			
36     54.47     2.06       37     55.87     2.20       38     57.55     2.54	34	52.01	1.99			
37     55.87     2.20       38     57.55     2.54	35	53.20	2.00			
38 57.55 2.54	36	54.47	2.06			
<del> </del>	37	55.87	2.20			
50.00	38	57.55	2.54			
39   59.83   3.09	39	59.83	3.09			
40 64.98 5.10	40	64.98	5.10			

<sup>\*</sup>SE=Standard Error on T-score metric

MANAGING EMOTIONS 4-Item Short Form Short Form Conversion Table					
Raw Score	T-score	SE*			
4	24.82	4.05			
5	29.01	2.80			
6	31.42	2.54			
7	33.41	2.44			
8	35.20	2.40			
9	36.93	2.41			
10	38.67	2.43			
11	40.43	2.43			
12	42.18	2.43			
13	43.98	2.45			
14	45.88	2.48			
15	47.86	2.51			
16	49.89	2.51			
17	52.02	2.55			
18	54.38	2.65			
19	57.29	3.06			
20	63.45	5.31			

<sup>\*</sup>SE=Standard Error on T-score metric

# PROMIS SHORT FORM V1.0 – SELF-EFFICACY FOR MANAGING SYMPTOMS 4A & 8A

MANAGING SYMPTOMS 8-Item Short Form Short Form Conversion Table					
Raw Score	T-score	SE*			
8	22.67	4.14			
9	26.08	3.09			
10	27.85	2.82			
11	29.30	2.57			
12	30.55	2.40			
13	31.65	2.27			
14	32.65	2.18			
15	33.58	2.12			
16	34.46	2.08			
17	35.31	2.06			
18	36.14	2.06			
19	36.96	2.05			
20	37.77	2.06			
21	38.58	2.07			
22	39.39	2.07			
23	40.20	2.08			
24	41.02	2.09			
25	41.85	2.10			
26	42.69	2.11			
27	43.56	2.13			
28	44.44	2.14			
29	45.35	2.14			
30	46.27	2.15			
31	47.21	2.16			
32	48.18	2.17			
33	49.19	2.19			
34	50.26	2.23			
35	51.42	2.30			
36	52.71	2.43			
37	54.16	2.60			
38	55.95	2.91			
39	58.35	3.41			
40	63.85	5.39			

<sup>\*</sup>SE=Standard Error on T-score metric

MANAGING SYMPTOMS 4-Item Short Form Short Form Conversion Table					
Raw Score	T-score	SE*			
4	24.93	4.44			
5	28.72	3.32			
6	30.87	3.07			
7	32.85	2.87			
8	34.64	2.78			
9	36.34	2.78			
10	37.99	2.80			
11	39.59	2.82			
12	41.16	2.86			
13	42.79	2.93			
14	44.56	2.97			
15	46.41	2.96			
16	48.27	2.97			
17	50.26	3.09			
18	52.75	3.37			
19	55.90	3.71			
20	62.12	5.73			

<sup>\*</sup>SE=Standard Error on T-score metric

# PROMIS SHORT FORM V1.0 – SELF-EFFICACY FOR MANAGING DAILY ACTIVITIES 4A & 8A

DAILY ACTIVITIES 8-Item Short Form Short Form Conversion Table					
Raw Score	T-score	SE*			
8	23.70	4.37			
9	27.10	3.34			
10	28.48	3.13			
11	29.95	2.82			
12	31.17	2.61			
13	32.26	2.40			
14	33.22	2.26			
15	34.11	2.14			
16	34.92	2.04			
17	35.68	1.97			
18	36.39	1.92			
19	37.07	1.88			
20	37.73	1.85			
21	38.37	1.84			
22	39.00	1.84			
23	39.62	1.83			
24	40.24	1.83			
25	40.86	1.85			
26	41.49	1.86			
27	42.13	1.87			
28	42.77	1.89			
29	43.43	1.92			
30	44.11	1.96			
31	44.82	2.00			
32	45.58	2.08			
33	46.39	2.17			
34	47.29	2.32			
35	48.31	2.51			
36	49.71	3.09			
37	51.00	3.31			
38	52.79	3.71			
39	54.83	4.02			
40	60.74	6.05			

<sup>\*</sup>SE=Standard Error on T-score metric



## PROMIS Patient-Reported Outcomes Measurement Information System Dynamic Tools to Measure Health Outcomes From the Patient Perspective

DAILY ACTIVITIES 4-Item Short Form Short Form Conversion Table				
Raw Score	T-score	SE*		
4	26.02	4.44		
5	29.83	3.31		
6	31.73	3.10		
7	33.32	2.95		
8	34.78	2.82		
9	36.16	2.69		
10	37.45	2.64		
11	38.70	2.62		
12	39.95	2.63		
13	41.24	2.67		
14	42.60	2.74		
15	44.07	2.88		
16	46.03	3.59		
17	47.94	3.91		
18	50.32	4.32		
19	52.79	4.55		
20	59.26	6.48		

<sup>\*</sup>SE=Standard Error on T-score metric

## PROMIS SHORT FORM V1.0 – SELF-EFFICACY FOR MANAGING SOCIAL INTERACTIONS 4A & 8A

SOCIAL INTERACTIONS 8-Item Short Form						
Short Form Conversion Table						
Raw Score	T-score	SE*				
8	20.01	4.26				
9	22.94	3.42				
10	24.64	3.13				
11	26.11	2.86				
12	27.37	2.65				
13	28.48	2.48				
14	29.47	2.35				
15	30.38	2.26				
16	31.22	2.19				
17	32.01	2.14				
18	32.77	2.11				
19	33.50	2.08				
20	34.21	2.07				
21	34.91	2.06				
22	35.61	2.06				
23	36.31	2.06				
24	37.01	2.07				
25	37.71	2.08				
26	38.43	2.09				
27	39.16	2.10				
28	39.90	2.12				
29	40.67	2.13				
30	41.46	2.15				
31	42.29	2.17				
32	43.15	2.20				
33	44.06	2.24				
34	45.05	2.31				
35	46.14	2.42				
36	47.40	2.63				
37	48.82	2.83				
38	50.66	3.20				
39	53.24	3.78				
40	59.82	6.13				

<sup>\*</sup>SE=Standard Error on T-score metric

SOCIAL INTERACTIONS 4-Item Short Form Short Form Conversion Table				
Raw Score	T-score	SE*		
4	23.08	4.36		
5	26.52	3.46		
6	28.30	3.30		
7	30.07	3.11		
8	31.68	2.96		
9	33.14	2.87		
10	34.53	2.83		
11	35.89	2.81		
12	37.26	2.81		
13	38.65	2.83		
14	40.10	2.84		
15	41.64	2.87		
16	43.33	2.99		
17	45.12	3.05		
18	47.37	3.32		
19	50.47	3.82		
20	58.19	6.45		

<sup>\*</sup>SE=Standard Error on T-score metric

# PROMIS SHORT FORM V1.0 – SELF-EFFICACY FOR MANAGING MEDICATIONS AND TREATMENTS 4A & 8A

MEDICATIONS AND TREATMENTS 8-Item Short Form					
Short Form Conversion Table					
Raw Score	T-score	SE*			
8	19.05	3.86			
9	21.98	3.01			
10	23.53	2.79			
11	24.86	2.59			
12	26.00	2.44			
13	27.01	2.32			
14	27.94	2.25			
15	28.81	2.21			
16	29.64	2.18			
17	30.44	2.17			
18	31.22	2.16			
19	31.99	2.17			
20	32.76	2.17			
21	33.52	2.19			
22	34.28	2.21			
23	35.06	2.23			
24	35.85	2.25			
25	36.65	2.28			
26	37.47	2.30			
27	38.30	2.32			
28	39.15	2.35			
29	40.03	2.37			
30	40.93	2.41			
31	41.88	2.46			
32	42.89	2.53			
33	43.99	2.64			
34	45.20	2.80			
35	46.56	3.03			
36	48.20	3.48			
37	49.91	3.73			
38	52.15	4.20			
39	54.95	4.66			
40	60.74	6.31			

<sup>\*</sup>SE=Standard Error on T-score metric

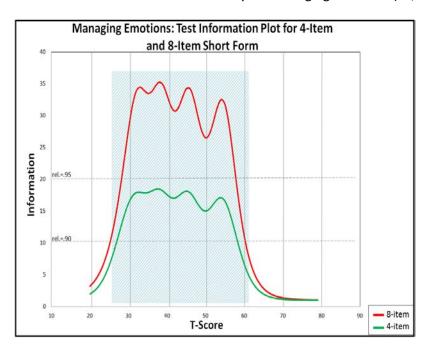
MEDICATIONS AND TREATMENTS 4-Item Short Form Short Form Conversion Table		
Raw Score	T-score	SE*
4	22.01	4.00
5	25.50	3.12
6	27.34	3.01
7	29.10	2.81
8	30.68	2.76
9	32.14	2.73
10	33.55	2.75
11	34.97	2.81
12	36.45	2.91
13	37.98	3.00
14	39.53	3.07
15	41.17	3.22
16	43.16	3.77
17	45.16	3.88
18	47.90	4.29
19	50.91	4.59
20	58.08	6.74

<sup>\*</sup>SE=Standard Error on T-score metric

# APPENDIX III. ITEM INFORMATION AND T-SCORE PLOTS (4-ITEM AND 8-ITEM SHORT FORM)

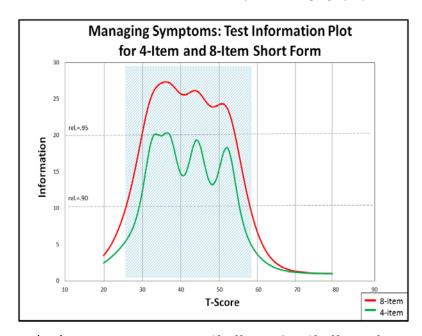
#### **MANAGING EMOTIONS**

PROMIS Short Form v1.0 – Self-Efficacy for Managing Emotions (4a, 8a)



### **MANAGING SYMPTOMS**

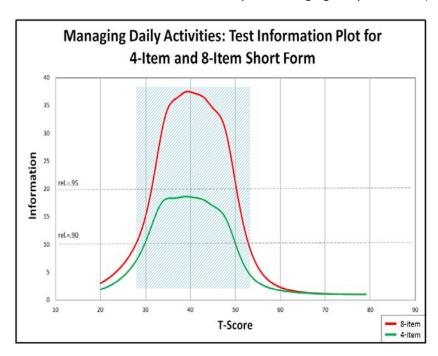
PROMIS Short Form v1.0 – Self-Efficacy for Managing Symptoms (4a, 8a)



10/25/2017PROMIS - Gen. Self-Efficacy & Self-Efficacy for Man. Chronic Conditions Page 22

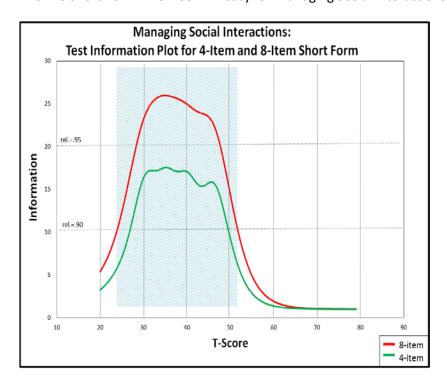
#### **MANAGING DAILY ACTIVITIES**

PROMIS Short Form v1.0 – Self-Efficacy for Managing Daily Activities (4a, 8a)



### **MANAGING SOCIAL INTERACTIONS**

PROMIS Short Form v1.0 – Self-Efficacy for Managing Social Interactions (4a, 8a)



### **MANAGING MEDICATIONS AND TREATMENTS**

PROMIS Short Form v1.0 – Self-Efficacy for Managing Medications and Treatments (4a, 8a)

