



# GLOBAL HEALTH MEASURE DIFFERENCES

A brief guide to differences between the PROMIS® Global Health instruments:

ADULT	PEDIATRIC	EARLY CHILDHOOD PARENT-REPORT	PARENT PROXY
PROMIS Scale v1.0/1.1 – Global Health* PROMIS Scale v1.2 – Global Health PROMIS Scale v1.2 – Global Mental 2a PROMIS Scale v1.2 – Global Physical 2a	PROMIS Pediatric Scale v1.0 – Global Health 7 PROMIS Pediatric Scale v1.0 – Global Health 7+2	PROMIS Early Childhood Parent-Report Scale v1.0 - Global Health 8a	PROMIS Parent Proxy Scale v1.0 – Global Health 7 PROMIS Parent Proxy Scale v1.0 – Global Health 7+2

\*Retired measure

## ABOUT GLOBAL HEALTH

The Adult PROMIS Global Health measures assess an individual’s physical, mental, and social health. The measures are generic, rather than disease-specific, and often use an “In General” item context as it is intended to globally reflect individuals’ assessment of their health. The adult PROMIS Global Health measure produces two scores: Physical Health and Mental Health. Shorter global measures (Global Mental 2a, Global Physical 2a) produce just one score.

The PROMIS Pediatric Scale - Global Health 7 and PROMIS Parent Proxy Scale - Global Health 7 measures assess overall evaluation of one’s physical and mental health. They produce a single score. The 7+2 versions include the same global health summary score as well as scores for pain interference and fatigue.

The PROMIS Early Childhood Parent-Report Global Health measure assesses young children's overall evaluation of an individual's physical, mental, and social health. It produces a single score.

Global Health instruments are available for adults (ages 18+), pediatric self-report (ages 8-17), for parents serving as proxy reporters for their child (youth ages 5-17) or for their very young child (children ages 1-5).

## INTRODUCTION TO ASSESSMENT OPTIONS

There is one administration option for assessing Global Health: fixed length scales. No computer adaptive test (CAT) is available. When administering a scale, instruct respondents to answer all of the items (i.e., questions or statements) presented.

## VERSION DIFFERENCES

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.

The PROMIS adult Global v1.0 and Global v1.1 paper forms are identical. The electronic version of Global v1.0 had “In the past 7 days” associated with item Global09. The electronic version of Global v1.1 measure correctly removes this additional item context; this revised item is Global09r. Global09 and Global09r are scored identically.

PROMIS Global v1.2 was constructed to enable automatic Item Response Theory scoring in the Assessment Center API (used by REDCap and others) and the HealthMeasures Scoring Service. The syntax of the items in Global v1.2 is identical to the syntax used in Global v1.1. To enable automated scoring, modifications were made only to response scores for three items. Specifically:

Items Global08 and Global10 (now Global08r and Global10r) have been altered in v1.2; the response scores (e.g., 1=None to 5=Very severe) were reversed (5=None to 1=Very severe; Table 1). This was done to ensure that higher scores for responses always indicate better health. This means that users do not have to recode v1.2 items by hand to obtain mental and physical health T-scores. In addition, item Global07 was changed to Global07r, signifying that recoding response scores from 0-10 to 1-5 is done automatically in the Assessment Center API (used by REDCap) and the HealthMeasures Scoring Service. There is no change to appearance of this item to the respondent. Previous versions of the item required modifying response scores prior to calculating a score.

Table 1: Differences in item IDs and response scores between v1.0/v1.1 and v1.2 of the Adult Global Scale

PROMIS Scale v1.0/v1.1 – Global Health		PROMIS Scale v1.2 – Global Health	
Item ID	Raw Scores and Responses	Item ID	Raw Scores and Responses
Global10	1=Never 2=Rarely 3=Sometimes 4=Often 5=Always	Global10r	5=Never 4=Rarely 3=Sometimes 2=Often 1=Always
Global08	1=None 2=Mild 3=Moderate 4=Severe 5=Very severe	Global08r	5=None 4=Mild 3=Moderate 2=Severe 1=Very severe
Global07	Users need to recode the 0-10 response scores into 1-5 scores.	Global07r	The 0-10 response scores are automatically recoded by the scoring algorithm used in the API and the HealthMeasures Scoring Service.



The PROMIS Scale v1.2 - Global Mental 2a and Scale v1.2 - Global Physical 2a scales consist of two items from PROMIS Scale v1.2 – Global Health. Items were selected based on content and psychometric characteristics. No earlier version of these scales exists.

There is only one version of the Global Health scales for Pediatric, Early Childhood Parent-Report and Parent Proxy.

## **SELECTING A GLOBAL SCALE**

### **Adult Scales**

For adults, there are multiple versions of the Global scale. Global v1.2 is the most recent version and should be used if possible. Because the appearance of v1.0, v1.1, and v1.2 are identical to respondents, the version number is less important when reporting results. We recommend converting data obtained with the v1.0 and v1.1 measures to the v1.2 format and using the HealthMeasures Scoring Service.

The PROMIS Global scale produces a a) physical and b) mental health score from 4 items each. This measure should be used if both components are of interest and a greater level of measurement precision is desired. If a very short measure is needed, the 2-item scales (Global Mental, Global Physical) can be administered as a pair or separately, though the 2-item measures have less precision than the 4-item versions used in PROMIS Global. The 2-item scales are a good choice for studies with large samples and a requirement to keep participant burden at a minimum.

### **Pediatric and Parent Proxy Scales**

Both the Pediatric and Parent Proxy measures have a 7-item and 9-item version. The 7-item versions are best used when assessment time is limited and a single measure of global health is desired. If there is a need to have more information about a child or adolescent's physical health, the 7+2 versions produce the same global score as well as a score from a single pain interference item and a score from a fatigue item. The added calibrated items were selected from PROMIS pediatric and parent proxy item banks. These two items are administered but do not contribute to the global health score. Rather, they are "signal" items that provide initial score estimates for pain interference and fatigue.

### **Parent-Report Forms**

There is one PROMIS Early Childhood Parent-Report instrument with 8 items and assesses a child's overall physical, mental, and social health. It produces a single score of global health. The measure is conceptually aligned to the PROMIS Parent Proxy Global Health instrument for children ages 5-17 and includes several overlapping items.

### **Parent Proxy Report Versus Early Childhood Parent-Report Measures**

The PROMIS Parent Proxy measures are for parents to report on their children ages 5-17. The PROMIS Early Childhood Parent-Report measures are for parents to report on their children ages 1 to 5. In both cases, the parent provides his or her perspective about the child's positive affect. Scores from PROMIS Parent Proxy and PROMIS Early Childhood Parent-Report measures are calibrated and normed with different, age-appropriate reference populations and therefore are on different metrics. Scores from one should not be compared to scores on the other. For parents of 5-year-old children, either the PROMIS Parent Proxy or the PROMIS Early Childhood Parent-Report measure can be used. In general, for longitudinal research and/or on-going clinical follow-up, using the measure that aligns with the majority of the time frame with which the child will be studied is recommended. For example, if the



measure is administered at child age 1 year through child age 5, using the PROMIS Early Childhood Parent-Report is recommended. If the child will be studied across in both early childhood and beyond age 5, switching to the PROMIS Parent Proxy measure is necessary.

## **SELECTING A PEDIATRIC OR PARENT PROXY INSTRUMENT**

In selecting whether to use the pediatric or parent proxy instrument for this domain, it is important to consider both the population and the domain which you are studying. Pediatric self-report should be considered the standard for measuring patient-reported outcomes among children. However, circumstances exist when the child is too young, cognitively impaired, or too ill to complete a patient-reported outcome instrument. While information derived from self-report and proxy-report is not equivalent, it is optimal to assess both the child and the parent since their perspectives may be independently related to healthcare utilization, risk factors, and quality of care.

## **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.

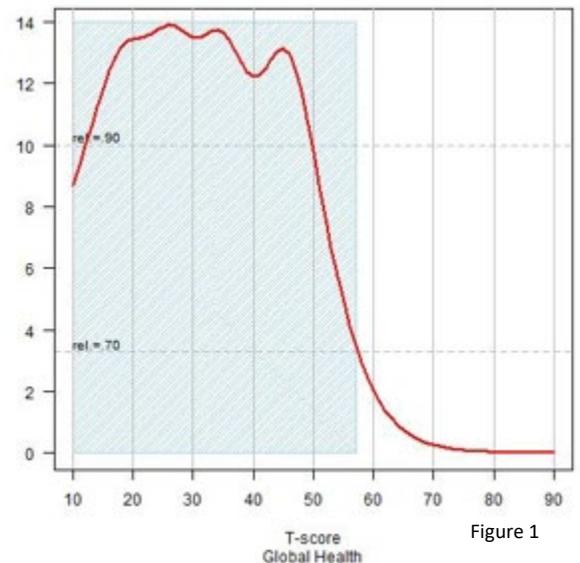
**Important:** *A higher PROMIS T-score represents more of the concept being measured.* Thus, a person who has T- scores of 60 for Global Health, Global Physical Health, or Global Mental Health is one standard deviation better (more healthy) than the general population.

## STATISTICAL CHARACTERISTICS

There are four key features of the score for Global Health:

- **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 =  $1 - SE^2$ ).
- **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 =  $1/SE^2$ ).
- **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  $\pm$   $(1.96 * SE)$  =  $52 \pm (1.96 * 2)$  = 48.1 to 55.9).

**Early Childhood Parent-Report Scale Test Information Plot**



The two dotted horizontal lines in Figure 1 each represent a degree of internal consistency reliability (i.e., .70 or .90) typically regarded as sufficient for an accurate individual score for the Early Childhood Parent-Report scale. The shaded blue region marks the range of the scale where measurement precision is comparable to the reliability of .70 for the form.

The final score is represented by the T-score, a standardized score with a mean of 50 and a standard deviation (SD) of 10. More information is available at [www.HealthMeasures.net](http://www.HealthMeasures.net).

## PREVIEW OF SAMPLE ITEM

Figure 2 is an excerpt from the paper version of the Parent Proxy 7-item scale. This is the paper version format used for all global health instruments.

		Excellent	Very Good	Good	Fair	Poor
Global01_PXR1	In general, would you say your child's health is:.....	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
Global02_PXR1	In general, would you say your child's quality of life is:.....	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

Figure 2



## **FREQUENTLY ASKED QUESTIONS (FAQs)**

Q: I am interested in learning more. Where can I do that?

Review the HealthMeasures website at [www.healthmeasures.net](http://www.healthmeasures.net).

Q: Are these instruments available in other languages?

Yes! Look at the HealthMeasures website (<http://www.healthmeasures.net/explore-measurement-systems/promis/intro-to-promis/available-translations/117-available-translations>) 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\\_scoringervice](https://www.assessmentcenter.net/ac_scoringervice)).