



PROMIS+HEART FAILURE PROFILES

MEASURE DIFFERENCES

A brief guide to differences between the PROMIS[®]+Heart Failure (PROMIS+HF) profiles:

ADULT
PROMIS+Heart Failure-27 Profile v1.0
PROMIS+Heart Failure-10 Profile v1.0

ABOUT PROMIS+HEART FAILURE PROFILES

The PROMIS+Heart Failure-27 Profile v1.0 (PROMIS+HF-27) and PROMIS+Heart Failure-10 Profile v1.0 (PROMIS+HF-10) instruments were created from the PROMIS+HF long-form Profile measure (PROMIS+HF Profile), which was published in *Circulation: Heart Failure* in 2019.¹ The PROMIS+HF profiles are condition-specific measures that combine existing, universal PROMIS items with new HF-specific items. The long-form PROMIS+HF Profile has 86-items across 18 domains of physical, mental, and social health. Clinicians or researchers can select the items or domains from the PROMIS+HF Profile measure that are relevant to their specific clinical or research use case. To facilitate use of the PROMIS+HF Profile measure in research studies and routine care, the PROMIS+HF-27 and the PROMIS+HF-10 were developed. Additional details on measure development and validation are available in *ESC: Heart Failure*.²

The PROMIS+HF-27 has 27 items that span physical, mental, and social health with a total of 13 domains.³ The PROMIS+HF-10 has 10 items that span a total of 9 domains, and all included items are a subset of the PROMIS+HF-27. The majority of items evaluate health over the past 7 days. No timeframe is specified for physical function, ability to participate in social roles and activities, and independence items. The PROMIS+HF-27 and PROMIS+HF-10 each generate summary scores for physical health, mental health, social health, and overall health.

The PROMIS+HF-27 Profile was developed primarily for research purposes, and the PROMIS+HF-10 Profile was developed primarily for clinical purposes. The PROMIS+HF profiles are intended to be used with individuals with heart failure. The measures are intended for use with adults (ages 18+).

¹ Ahmad FS, Kallen MA, Schifferdecker KE, Carluzzo KL, Yount SE, Gelow JM, McCullough PA, Kimmel SE, Fisher ES, Cella D. Development and Initial Validation of the PROMIS[®]-Plus-HF Profile Measure. *Circ Heart Fail.* 2019 Jun;12(6):e005751. doi: 10.1161/CIRCHEARTFAILURE.118.005751.

² Ahmad FS, Jackson KL, Yount SE, Rothrock NE, Kallen MA, Lacson L, Bilimoria KY, Kho AN, Mutharasan RK, McCullough PA, Bruckel J, Fedson S, Kimmel SE, Eton DT, Grady KL, Yancy CW, Cella D. The development and initial validation of the PROMIS[®]+HF-27 and PROMIS+HF-10 profiles. *ESC Heart Fail.* 2022. Available from: <http://dx.doi.org/10.1002/ehf2.14061>

³For scoring purposes, the symptoms and pain interference domains were combined into domain as described in the scoring manual.

INTRODUCTION TO ASSESSMENT OPTIONS

The PROMIS+HF-27 and PROMIS+HF-10 Profiles can be administered using paper forms or within REDCap (measures are included in the REDCap Shared Library). When administering, instruct participants to answer all the items (i.e., questions or statements) presented, as some domain summary scores may not be calculated with missing data.



DIFFERENCES BETWEEN PROFILES

The PROMIS+HF-27 has 27 items that span physical, mental, and social health with a total of 13 domains. The PROMIS+HF-10 has 10 items that span a total of 9 domains, and all included items are a subset of the PROMIS+HF-27. The PROMIS+HF-27 was developed primarily for research purposes, and the PROMIS+HF-10 was developed primarily for clinical purposes.

Selecting a Profile

In selecting between profiles, the differences include length, domains, and specific items. The overall summary scores between the two profiles are highly correlated. If you are working with a sample in which you want the most precise measure, select the longer PROMIS-HF-27. For clinical purposes or selected research purposes when minimizing respondent burden is of high importance, then the PROMIS+HF-10 may be the preferable option.

SCORES

Summary Scores

The PROMIS+HF-27 and PROMIS+HF-10 instruments produce four summary scores: physical health summary, mental health summary, social health summary, and overall health summary. These summary scores are on a scale of 0 to 100 with a high score representing better health. Scoring of the summary scores can be performed by using the scoring equations provided in the Scoring Manual. Scoring for the summary scores is also available for REDCap and SAS.

Domain T-Scores

PROMIS T-Scores can be calculated for selected domains. For the PROMIS+HF-27, T-scores can be calculated for Dyspnea Severity, Fatigue, Physical Function, Sleep Disturbance, Pain Interference, Depression, Cognitive Function, and Ability to Participate in Social Roles and Activities. For the PROMIS+HF-10, T-scores can be calculated for Dyspnea Severity, Fatigue, Physical Function, Sleep Disturbance, Depression, and Ability to Participate in Social Roles and Activities. T-scores can be generated using the HealthMeasures Scoring Service (https://www.assessmentcenter.net/ac_scoringervice) or using the instructions and tables in the Scoring Manual.

For PROMIS T-scores, 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 Physical Function, Cognitive Function, and Ability to Participate in Social Roles and Activities, a T-score of 60 is one SD better than average. By comparison, a Physical Function T-score of 40 is one SD worse than average. For negatively-worded concepts like Dyspnea Severity, Fatigue, Sleep Disturbance, and Depression, a T-score of 60 is one SD worse than average.



Standard Error (SE): PROMIS scores include 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 $(52 + (1.96 * 2)) = 56$.

STATISTICAL CHARACTERISTICS

Detailed statistical characteristics of the PROMIS+HF-27 and PROMIS+HF-10, including reliability and validity statistics can be found in Ahmad et al, 2022.

Ahmad FS, Jackson KL, Yount SE, Rothrock NE, Kallen MA, Lacson L, Bilimoria KY, Kho AN, Mutharasan RK, McCullough PA, Bruckel J, Fedson S, Kimmel SE, Eton DT, Grady KL, Yancy CW, Cella D. The development and initial validation of the PROMIS®+HF-27 and PROMIS+HF-10 profiles. ESC Heart Fail. 2022. Available from: <http://dx.doi.org/10.1002/ehf2.14061>

PREVIEW OF SAMPLE ITEM

Figure 1 is an excerpt from the paper version of the v1.0 PROMIS+HF-27.

Please respond to each question or statement by marking one box per row.

	Over the past 7 days, how short of breath did you get with each of these activities?	No shortness of breath	Mildly short of breath	Moderately short of breath	Severely short of breath	I did not do this in the past 7 days
DYSSV002	Walking 50 steps/paces on flat ground at a normal speed without stopping.....	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> X
DYSSV008	Lifting something weighing 10-20 lbs (about 4.5-9 kg, like a large bag of groceries)	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> X
DYSSV010	Walking (faster than your usual speed) for 1/2 mile (almost 1 km) without stopping ..	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> X

FREQUENTLY ASKED QUESTIONS (FAQ)

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

Review the HealthMeasures website at www.healthmeasures.net.

Q: Are PROMIS instruments available in other languages?

Yes! Look at the HealthMeasures website (<http://www.healthmeasures.net/explore-measurement-systems/promis/intro-to-promis/available-translations>) for current information on PROMIS translations.