



# PROMIS ADULT PROFILE INSTRUMENTS

## MEASURE DIFFERENCES

A brief guide to differences between the PROMIS<sup>®</sup> Profile instruments for Adult respondents:

PROMIS-29 Profile v2.1
PROMIS-43 Profile v2.1
PROMIS-57 Profile v2.1
PROMIS-16 Profile v2.1 (PROPr)
PROMIS-29+2 Profile v2.1 (PROPr)
PROMIS Profile CAT v1.0 – 29
PROMIS-29 Profile v2.0*
PROMIS-43 Profile v2.0*
PROMIS-57 Profile v2.0*
PROMIS-29 Profile v1.0*
PROMIS-43 Profile v1.0*
PROMIS-57 Profile v1.0*

\*Retired measure

### ABOUT PROMIS ADULT PROFILES

PROMIS Profiles for adults are a collection of short forms or computer adaptive tests containing a fixed number of items from seven or eight PROMIS domains (Depression, Anxiety, Physical Function, Pain Interference, Fatigue, Sleep Disturbance, Ability to Participate in Social Roles and Activities, and sometimes Cognitive Function).

There are three primary PROMIS Profile Lengths: 29, 43, and 57 items. The **PROMIS-29** includes 4 questions for each of its 7 domains; similarly, the **PROMIS-43** has 6 questions per domain, and the **PROMIS-57** has 8 questions per domain. Each of these PROMIS Profiles includes an additional Pain Intensity 0-10 numeric rating scale (NRS).

The **PROMIS Profile CAT v1.0 – 29** includes the same domains as the PROMIS-29 (i.e., Depression, Anxiety, Physical Function, Pain Interference, Fatigue, Sleep Disturbance, and Ability to Participate in Social Roles and Activities), but instead of short forms, it includes 4-item computer adaptive tests (CATs). It also includes a Pain Intensity 0-10 numeric rating scale.

The **PROMIS 29+2 Profile (PROPr)** measure is comprised of the PROMIS-29 content, plus two Cognitive Function—Abilities items. The **PROMIS-16 Profile (PROPr)** measure assesses the same 8 domains as the PROMIS 29+2 Profile (PROPr). However, it includes only 2 items per domain. In addition to domain-level scores, the PROMIS 29+2 Profile (PROPr) and PROMIS-16 Profile (PROPr) can produce PROMIS Preference (PROPr) scores. Preference-based scores provide an overall summary of health-related quality of life on a common metric. Preference-based scores summarize multiple domains on a metric ranging from 0 (as bad as dead) to 1 (perfect or ideal health). PROPr scores can be used in comparisons across groups and for cost-utility analyses.

As with other PROMIS instruments, the PROMIS Adult Profiles are universal rather than disease-specific. They assess all domains over the past seven days, except for Physical Function and Ability to Participate in Social Roles and Activities, which have no timeframe specified.

These PROMIS Profile instruments are intended for Adults (ages 18+). Different profile measures exist for Pediatric self-report or Parent Proxy report.

## SELECTING A PROFILE MEASURE

To select the best Profile measure for you, identify if you are using it as a screening tool, comparing large groups (subgroups larger than 50-75 people), comparing small groups (subgroups smaller than 50-75 people), or evaluating individuals (e.g., for individual patient care). In addition, identify if you need a Cognitive Function score or would like to calculate a PROPr score.

Profile Measure Name	Length of short forms	# of Items	Includes Cognitive Function?	Produces a PROPr score?	Use for Screening?	Use for Comparing Large Groups?	Use for Comparing Small Groups and Individual Evaluation?
PROMIS-29	4	29	No	Only if you estimate a Cognitive Function score	Yes	Yes for Anxiety, Depression, Ability to Participate in Social Roles and Activities only	No
PROMIS-43	6	43	No	Only if you estimate a Cognitive Function score	No. Too long for a screening measure	Yes for Anxiety, Depression, Ability to Participate in Social Roles and Activities, Pain Interference, and Fatigue only	Yes for Pain Interference only
PROMIS-57	8	57	No	Only if you estimate a Cognitive Function score	No. Too long for a screening measure	Yes	Yes
PROMIS-16 (PROPr)	2	16	Yes	Yes	Yes	No	No
PROMIS-29+2 (PROPr)	4	31	Yes	Yes	Yes	Yes for Anxiety, Depression, and Ability to Participate in Social Roles and Activities only	No
PROMIS Profile CAT - 29	4-item CATs	29	No	Only if you estimate a Cognitive Function score	Yes	Yes	Yes

A comparison of information from the PROMIS-16 and PROMIS-29 is provided in Appendix 1.

## PROFILE ITEM SELECTION

The short forms that make up the PROMIS-29, -43, -57, and 29+2 Profile Instruments include “high information” items. The selection of items was in part based on item rankings within each domain using two psychometric criteria: (1) maximum interval information, and 2) CAT simulations. Item rankings were similar for both criteria. For the maximum interval criterion, each item information function was integrated (without weighting) for the interval from the mean to 2 SDs worse than the mean. For the CAT simulations, responses to all items in each bank were generated using a random sample of 1,000 simulees drawn separately for each bank (centered on 1.0 SD worse than the general population mean). Items were rank ordered based on their average administration rank over the simulees. Content experts reviewed the items and rankings and made cuts of 8, 6, and 4 items. The items within the PROMIS-29, PROMIS-43, and PROMIS-57 are nested/overlap (e.g., the 8-item form is the 6-item form plus two additional items). See Cella et al (2019) to learn more.

Candidate items for the PROMIS-16 were selected based on their use (e.g., part of PROMIS-29+2, clinical use) or psychometric properties. The measure was developed in three phases. In the first phase, a thorough empirical evaluation of all candidate PROMIS items and item pairs was conducted using data from a sample of adults from Amazon’s Mechanical Turk (MTurk) panel. This included basic descriptive information and associations with the PROMIS-29+2 Profile. In the second phase, a stakeholder meeting including individuals in clinical care, PROMIS measure developers, researchers, and patient advocates was held to discuss the findings. Final item pairs were agreed upon for two domains, and the candidate sets for the remaining domains were reduced. In the third phase, a survey of the stakeholder panel and another sample of MTurk adults was conducted to solicit preferences for one of two remaining item pairs for each of the other six domains. Stakeholders and MTurk respondents had similar preferences among the remaining candidate item pairs, and final items were selected based on those preferences. See Edelen et al (2024) to learn more.

Cella D, Choi SW, Condon DM, Schalet B, Hays RD, Rothrock NE, Yount S, Cook KF, Gershon RC, Amtmann D, DeWalt DA, Pilkonis PA, Stone AA, Weinfurt K, Reeve BB. PROMIS adult health profiles: Efficient short-form measures of seven health domains. *Value in Health*. 2019 May;22(5):537-544. doi: 10.1016/j.jval.2019.02.004. PMID: 31104731; PMCID: PMC7201383.

Edelen MO, Zeng C, Hays RD, Rodriguez A, Hanmer J, Baumhauer J, Cella D, Reeve BB, Herman PM. Development of an ultra-short measure of eight domains of health-related quality of life for research and clinical care: The Patient-Reported Outcomes Measurement Information System PROMIS-16 profile. *Qual Life Res*. 2024 Feb 6. doi: 10.1007/s11136-023-03597-6. Epub ahead of print. Erratum in: *Qual Life Res*. 2024 Aug 27. doi: 10.1007/s11136-024-03762-5. PMID: 38319489.

## PROFILES OF SHORT FORMS VERSUS COMPUTER ADAPTIVE TESTS

The PROMIS-29, PROMIS-43, PROMIS-57, PROMIS-16 (PROPr) and PROMIS-29+2 (PROPr) Profile instruments are administered as short forms (not adaptive administration). Short forms are ideal when clinical researchers prefer to ask the same question of all respondents or of the same respondent over time to enable a more direct comparability across people or time. The PROMIS Profile CAT v1.0 – 29 is comprised of computer adaptive tests (CATs) rather than short forms. Because CATs are tailored to each respondent, the Profile CAT can cover a wider range of function or symptoms with greater precision than 4-item short forms used in the PROMIS-29.

## VERSION DIFFERENCES

Some PROMIS domains have multiple versions of instruments (i.e. v1.0, v2.0, v2.1). 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 (v2.0 to v2.1) 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.

### Differences between PROMIS-29, PROMIS-43, and PROMIS-57 v1.0, v2.0, and v2.1

#### V1.0 to V2.0

- In v2.0, an Ability to Participate in Social Roles and Activities v2.0 short form replaced a Satisfaction with Participation in Social Roles v1.0 short form. Because these are different domains and item banks, the Social scores between v1.0 and v2.0 Profiles should not be compared to each other.
- In the PROMIS-43 and PROMIS-57, the Physical Function short form was also updated. However, the final Physical Function T-scores from v1.0 and v2.0 Profiles can be directly compared to each other.

#### V2.0 to V2.1

- In v2.1 Profiles, the Physical Function item content remained the same, but calibrations were updated to match those used in the PROMIS v2.0 Physical Function item bank. T-scores from the Physical Function short forms in v2.1 Profiles can be directly compared to T-scores from the Physical Function short forms in v2.0 and v1.0 Profiles.

The following tables list the specific short forms that comprise each version of the PROMIS-29, PROMIS-43, and PROMIS-57 Adult Profiles:

Short Forms in PROMIS-29 Profiles		
PROMIS-29 v1.0	PROMIS-29 v2.0	PROMIS-29 v2.1
PROMIS SF v1.0 – Physical Function 4a	PROMIS SF v1.0 – Physical Function 4a	PROMIS SF v2.0 – Physical Function 4a
PROMIS SF v1.0 – Anxiety 4a	PROMIS SF v1.0 – Anxiety 4a	PROMIS SF v1.0 – Anxiety 4a
PROMIS SF v1.0 – Depression 4a	PROMIS SF v1.0 – Depression 4a	PROMIS SF v1.0 – Depression 4a
PROMIS SF v1.0 – Fatigue 4a	PROMIS SF v1.0 – Fatigue 4a	PROMIS SF v1.0 – Fatigue 4a
PROMIS SF v1.0 – Sleep Disturbance 4a	PROMIS SF v1.0 – Sleep Disturbance 4a	PROMIS SF v1.0 – Sleep Disturbance 4a
PROMIS SF v1.0 – Satisfaction with Participation in Social Roles 4a	PROMIS SF v2.0 – Ability to Participate in Social Roles and Activities 4a	PROMIS SF v2.0 – Ability to Participate in Social Roles and Activities 4a
PROMIS SF v1.0 – Pain Interference 4a	PROMIS SF v1.0 – Pain Interference 4a	PROMIS SF v1.0 – Pain Interference 4a
PROMIS Pain Intensity item (Global07)	PROMIS Pain Intensity item (Global07)	PROMIS Pain Intensity item (Global07)

Short Forms in PROMIS-43 Profiles		
PROMIS-43 v1.0	PROMIS-43 v2.0	PROMIS-43 v2.1
PROMIS SF v1.0 – Physical Function 6a	PROMIS SF v1.2 – Physical Function 6b	PROMIS SF v2.0 – Physical Function 6b
PROMIS SF v1.0 – Anxiety 6a	PROMIS SF v1.0 – Anxiety 6a	PROMIS SF v1.0 – Anxiety 6a
PROMIS SF v1.0 – Depression 6a	PROMIS SF v1.0 – Depression 6a	PROMIS SF v1.0 – Depression 6a
PROMIS SF v1.0 – Fatigue 6a	PROMIS SF v1.0 – Fatigue 6a	PROMIS SF v1.0 – Fatigue 6a
PROMIS SF v1.0 – Sleep Disturbance 6a	PROMIS SF v1.0 – Sleep Disturbance 6a	PROMIS SF v1.0 – Sleep Disturbance 6a
PROMIS SF v1.0 – Satisfaction with Participation in Social Roles 6a	PROMIS SF v2.0 – Ability to Participate in Social Roles and Activities 6a	PROMIS SF v2.0 – Ability to Participate in Social Roles and Activities 6a
PROMIS SF v1.0 – Pain Interference 6a	PROMIS SF v1.0 – Pain Interference 6a	PROMIS SF v1.0 – Pain Interference 6a
PROMIS Pain Intensity item (Global07)	PROMIS Pain Intensity item (Global07)	PROMIS Pain Intensity item (Global07)

Short Forms in PROMIS-57 Profiles		
PROMIS-57 v1.0	PROMIS-57 v2.0	PROMIS-57 v2.1
PROMIS SF v1.0 – Physical Function 8a	PROMIS SF v1.2 – Physical Function 8b	PROMIS SF v2.0 – Physical Function 8b
PROMIS SF v1.0 – Anxiety 8a	PROMIS SF v1.0 – Anxiety 8a	PROMIS SF v1.0 – Anxiety 8a
PROMIS SF v1.0 – Depression 8a	PROMIS SF v1.0 – Depression 8a	PROMIS SF v1.0 – Depression 8a
PROMIS SF v1.0 – Fatigue 8a	PROMIS SF v1.0 – Fatigue 8a	PROMIS SF v1.0 – Fatigue 8a
PROMIS SF v1.0 – Sleep Disturbance 8a	PROMIS SF v1.0 – Sleep Disturbance 8a	PROMIS SF v1.0 – Sleep Disturbance 8a
PROMIS SF v1.0 – Satisfaction with Participation in Social Roles 8a	PROMIS SF v2.0 – Ability to Participate in Social Roles and Activities 8a	PROMIS SF v2.0 – Ability to Participate in Social Roles and Activities 8a
PROMIS SF v1.0 – Pain Interference 8a	PROMIS SF v1.0 – Pain Interference 8a	PROMIS SF v1.0 – Pain Interference 8a
PROMIS Pain Intensity item (Global07)	PROMIS Pain Intensity item (Global07)	PROMIS Pain Intensity item (Global07)

### PROMIS-29+2 Profile v2.1 (PROPr)

- There is no earlier version (i.e., v1.0, v2.0) of the PROMIS-29+2 Profile (PROPr).
- Domain-level scores from PROMIS-29+2 Profile v2.1 (PROPr) can be compared with domain-level scores from other v2.1 and v2.0 Profiles.
- The PROPr score can be compared to PROPr scores generated from other measures (e.g., PROMIS-16 Profile v2.1 (PROPr)).

### PROMIS-16 Profile v2.1 (PROPr)

Although most of the items in the PROMIS-16 Profile are also included in the PROMIS-29 or PROMIS-29+2 (PROPr), four items are unique to the PROMIS-16 Profile (see table below).

- There is no earlier version (i.e., v1.0, v2.0) of the PROMIS-16 Profile (PROPr).
- Domain-level scores from PROMIS-16 Profile v2.1 (PROPr) can be compared with domain-level scores from other v2.1 and v2.0 Profiles. This is even true for Sleep Disturbance. Although the PROMIS-16 v2.1 Profile (PROPr) includes a Sleep-Related Impairment item, this item was co-calibrated so that it produces a Sleep Disturbance T-score like other PROMIS Profiles.
- The PROPr score can be compared to PROPr scores generated from other measures (e.g., PROMIS-29+2 Profile v2.1 (PROPr)).

Items in the PROMIS-16, PROMIS-29, and PROMIS-29+2			
Item ID	PROMIS-16 v2.1	PROMIS-29 v2.1	PROMIS-29+2 v2.1 (PROPr)
EDANX01		X	X
EDANX40	X	X	X
EDANX41	X	X	X
EDANX53		X	X
EDDEP04		X	X
EDDEP06		X	X
EDDEP29	X	X	X
EDDEP41	X	X	X
AN3	X	X	X
FATEXP40		X	X
FATEXP41		X	X
HI7	X	X	X
Sleep109		X	X
Sleep116		X	X
Sleep20		X	X
Sleep44		X	X
SLEEP90	X		
SLEEP25	X		
PAININ22		X	X
PAININ31	X	X	X
PAININ34		X	X
PAININ9	X	X	X
SRPPER11_CaPS		X	X
SRPPER18_CaPS		X	X
SRPPER23_CaPS		X	X
SRPPER31_CaPS	X		
SRPPER46_CaPS	X	X	X
PC27r	X		X
PC6r			X
PC-CaPS3R	X		
PFA11		X	X
PFA21	X	X	X
PFA23	X	X	X
PFA53		X	X
Global07		X	X

### PROMIS Profile CAT v1.0 – 29

The PROMIS Profile CAT v1.0 – 29 is comprised of 7 computer adaptive tests and one Pain Intensity item. Specifically, the measure includes:

PROMIS Profile CAT v1.0 – 29 Contents
PROMIS CAT v2.0 – Physical Function
PROMIS CAT v1.0 – Anxiety
PROMIS CAT v1.0 – Depression
PROMIS CAT v1.0 – Fatigue
PROMIS CAT v1.0 – Sleep Disturbance
PROMIS CAT v2.0 – Ability to Participate in Social Roles and Activities
PROMIS CAT v1.1 – Pain Interference
PROMIS Pain Intensity item (Global07)

The PROMIS Profile CAT v1.0 – 29 includes the same domains and item length as the PROMIS-29 Profile. Unlike all other profiles, it is comprised of computer adaptive tests (CATs) rather than short forms. Because CATs are tailored to each respondent, the Profile CAT can cover a wider range of function or symptoms with greater precision than 4-item short forms used in the PROMIS-29. Each CAT is fixed to administer 4 items. This is shorter than the default stopping rule for other PROMIS CATs. This results in a total of 29 items (7 CATs of 4 items each plus one pain intensity item; see Figure 1).

Scores from the PROMIS Profile CAT v1.0 – 29 can be compared to scores from short-form based v2.0 and v2.1 Profiles (i.e., PROMIS-29 v2.0 and v2.1, PROMIS-43 v2.0 and v2.1, PROMIS-57 v2.0 and v2.1, PROMIS-29+2 v2.1 (PROPr), PROMIS-16 v2.1 (PROPr)).

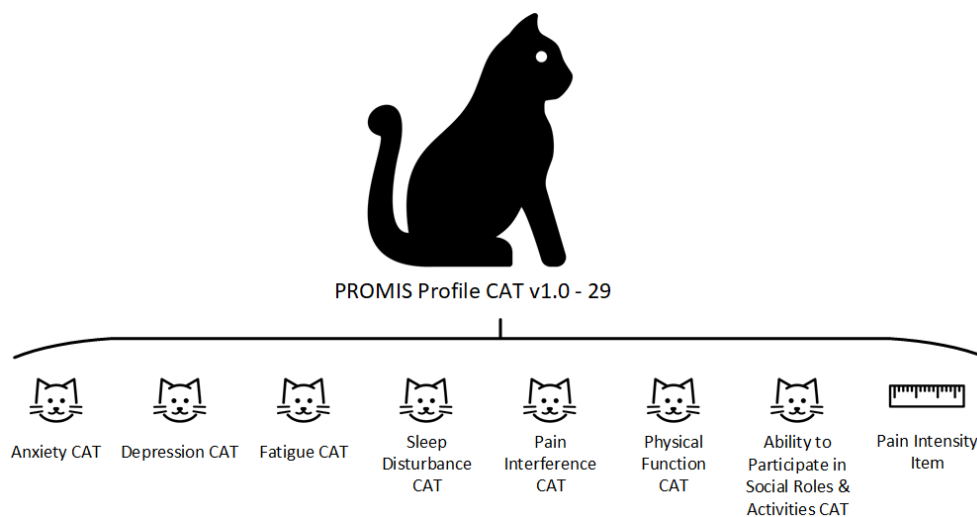


Figure 1. Icons from Noun Project: Bestdesignmarket, Georgiana Ionescu, Martin Lebreton



## SCORES

PROMIS measures produce T-scores: a standardized score with a mean of 50 and a standard deviation (SD) of 10. For most PROMIS measures, 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 negatively-worded concepts like Anxiety, Depression, Fatigue, Sleep Disturbance, and Pain Interference, a T-score of 60 is one SD worse than average. By comparison, an Anxiety T-score of 40 is one SD better than average. However, for positively-worded concepts like Physical Function, Ability to Participate in Social Roles and Activities, Cognitive Function, and Cognitive Function Abilities, a T-score of 60 is one SD better than average while a T-score of 40 is one SD worse than average.

PROMIS Profile measures can also produce PROMIS Preference (PROPr) scores. PROPr is a generic, society, preference-based summary score. It ranges from 0 (as bad as dead) to 1 (perfect or ideal health).

## STATISTICAL CHARACTERISTICS

There are four key features of the score for PROMIS Profile instruments:

- **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  $\pm (1.96*SE) = 52 \pm 3.9 = 48.1$  to 55.9).

## PREVIEW OF SAMPLE ITEM

Figure 2 is an excerpt from the paper version of the PROMIS-29 v2.1 Profile instrument. This is the paper version format used for all Profile instruments.

		<u>Anxiety</u>				
		In the past 7 days...				
		Never	Rarely	Sometimes	Often	Always
EDANX01	I felt fearful.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
EDANX40	I found it hard to focus on anything other than my anxiety .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

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 ([www.healthmeasures.net](http://www.healthmeasures.net)) for current information on PROMIS translations.

**Appendix 1:** Information curves comparing domain-level scores from the PROMIS-29 Profile v2.1 and PROMIS-16 Profile v2.1 (PROPr)

Figure 1. Information curves for Physical Function measured by the PROMIS-29 Profile v2.1 and PROMIS-16 Profile v2.1 (PROPr)

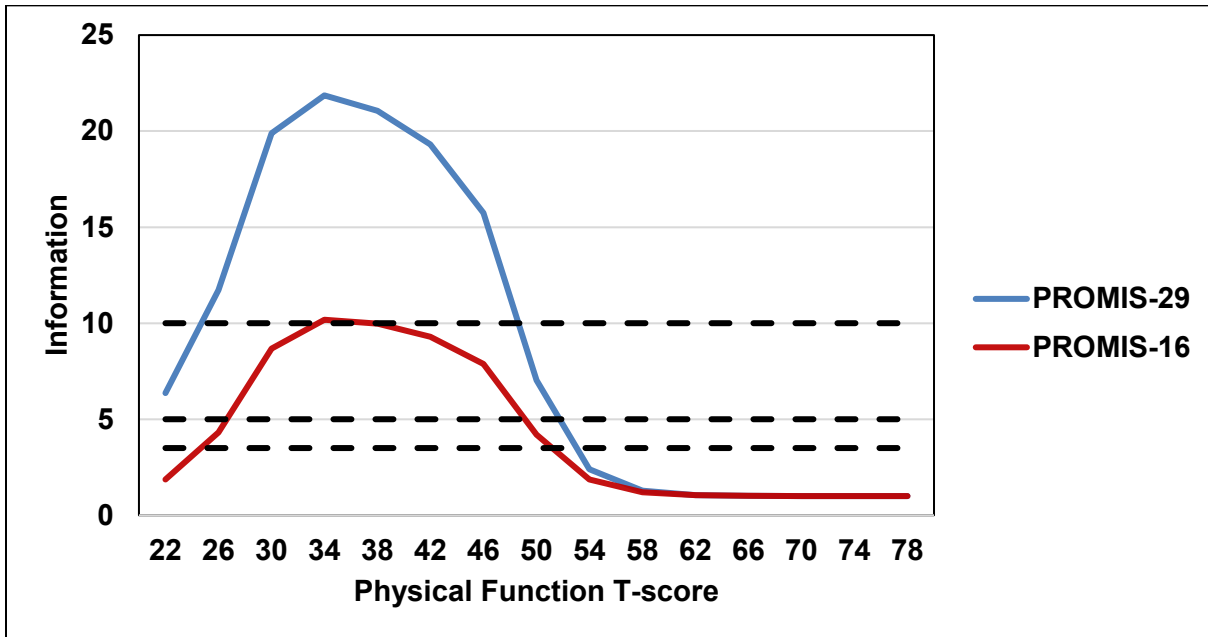


Figure 2. Information curves for Ability to Participate in Social Roles and Activities measured by the PROMIS-29 Profile v2.1 and PROMIS-16 Profile v2.1 (PROPr)

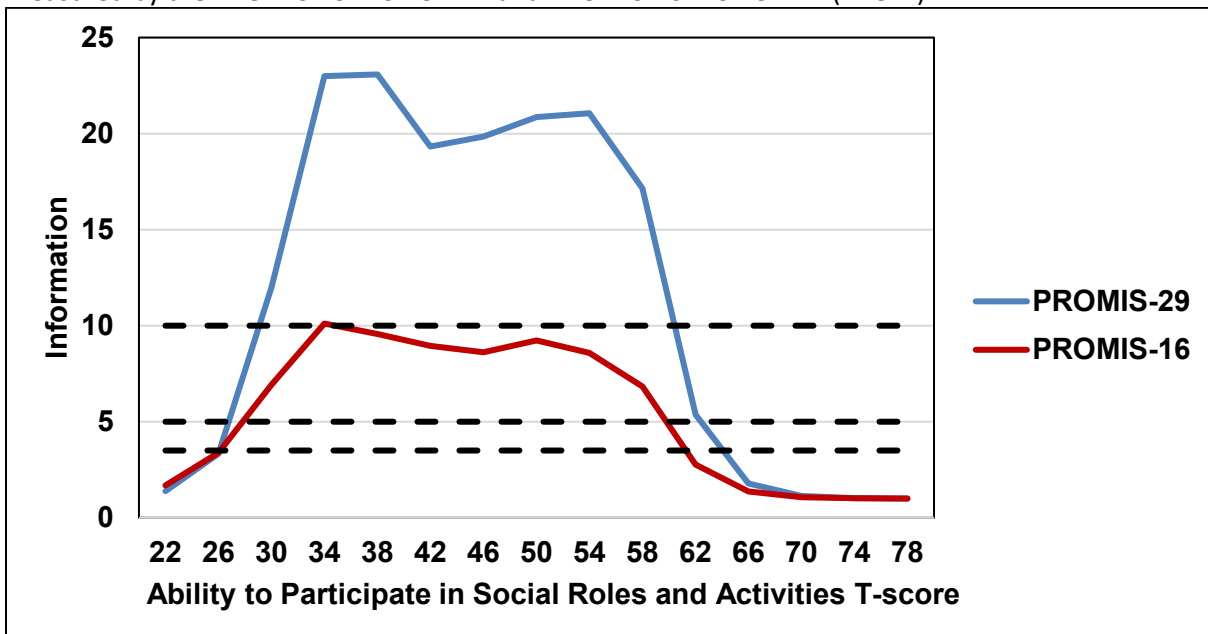


Figure 3. Information curves for Anxiety measured by the PROMIS-29 Profile v2.1 and PROMIS-16 Profile v2.1 (PROPr)

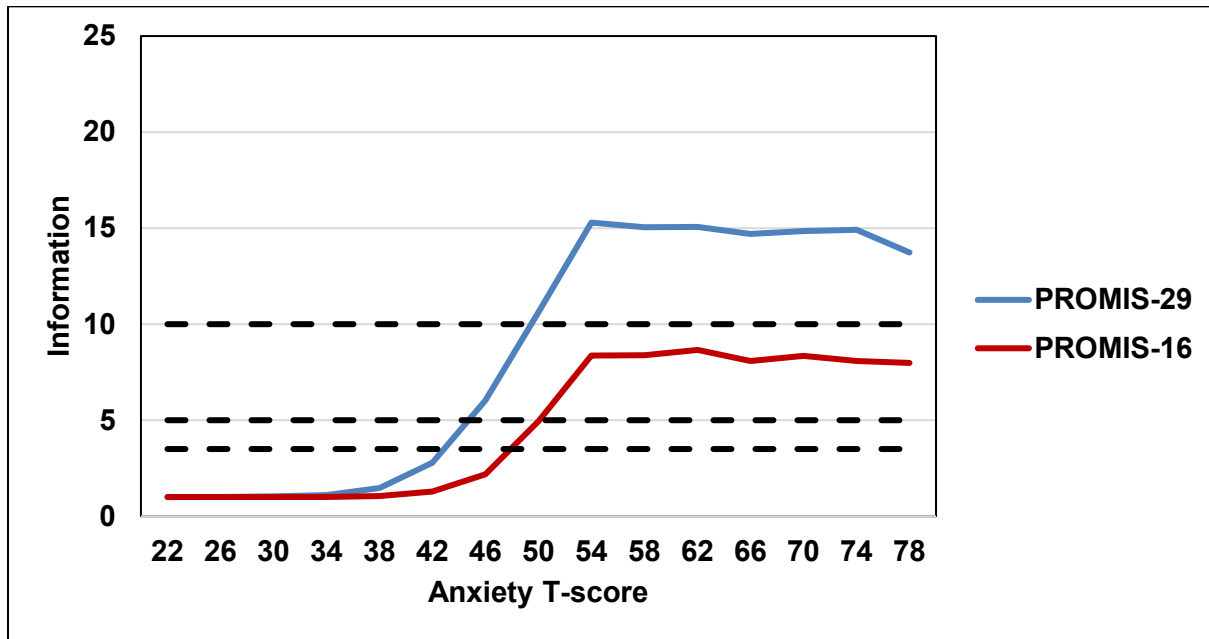


Figure 4. Information curves for Depression measured by the PROMIS-29 Profile v2.1 and PROMIS-16 Profile v2.1 (PROPr)

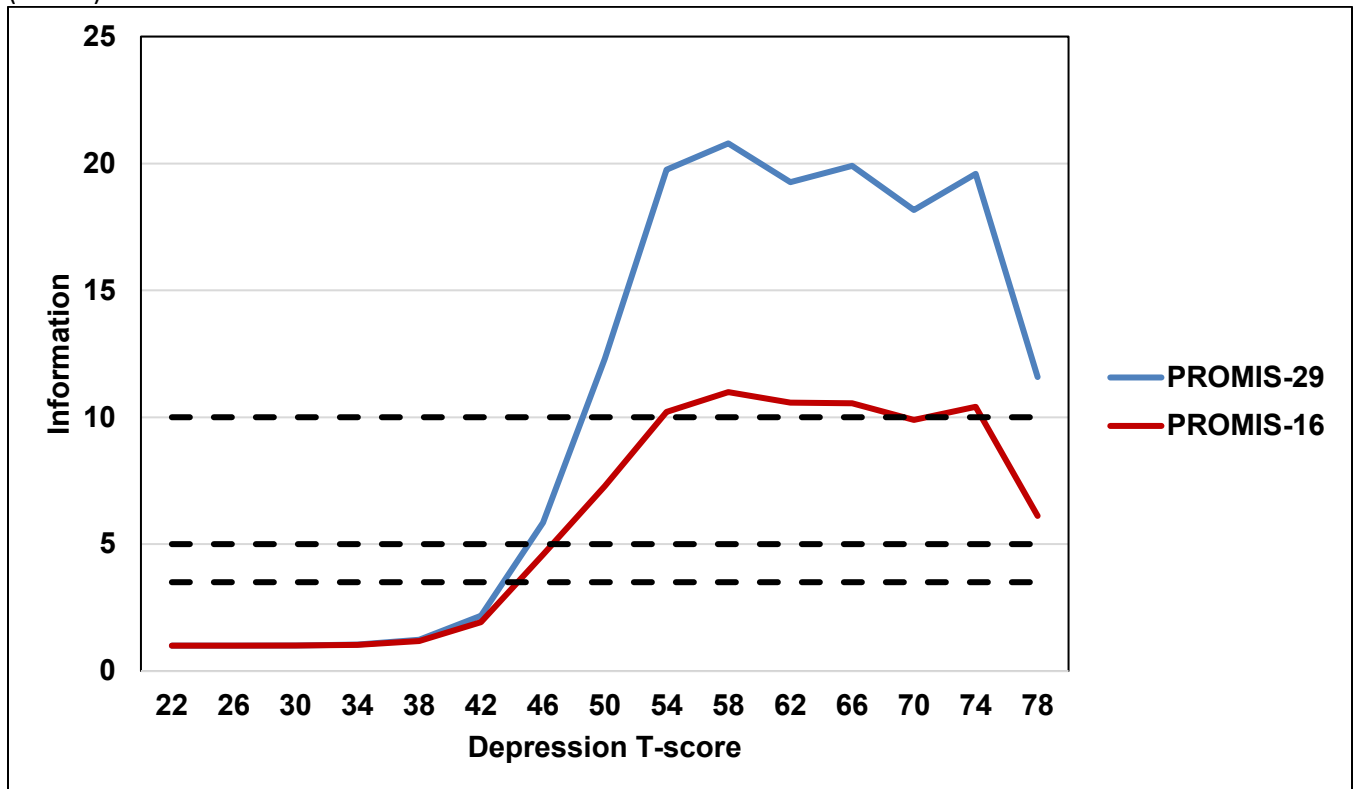


Figure 5. Information curves for Sleep Disturbance measured by the PROMIS-29 Profile v2.1 and PROMIS-16 Profile v2.1 (PROPr)

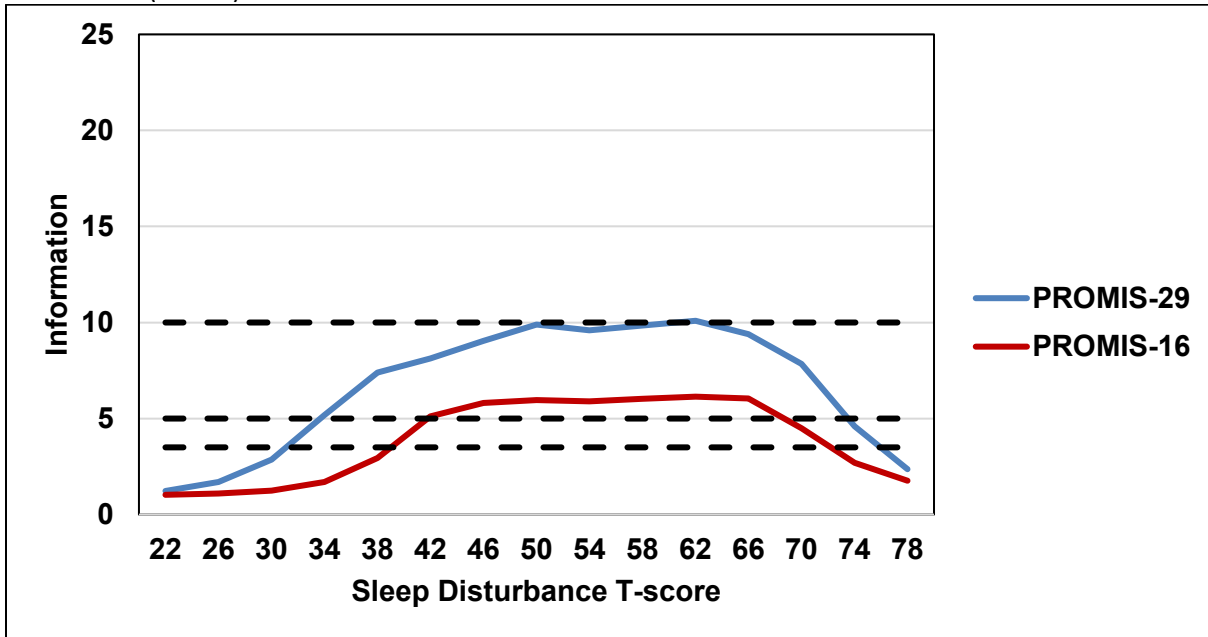


Figure 6. Information curves for Pain Interference measured by the PROMIS-29 Profile v2.1 and PROMIS-16 Profile v2.1 (PROPr)

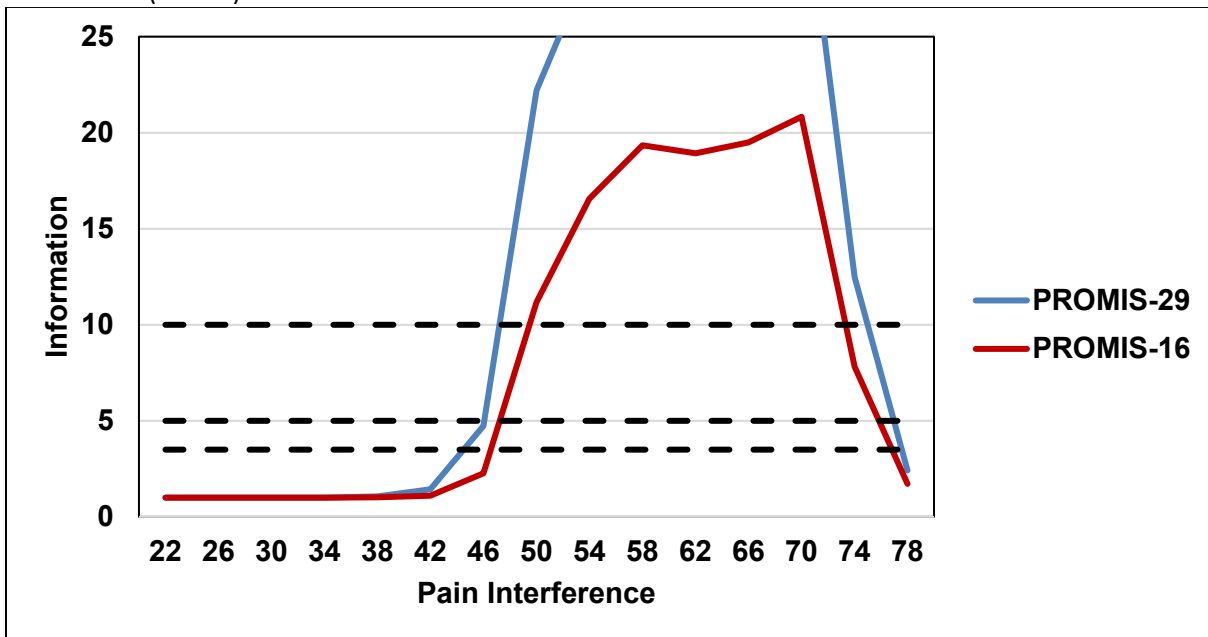


Figure 7. Information curves for Fatigue measured by the PROMIS-29 Profile v2.1 and PROMIS-16 Profile v2.1 (PROPr)

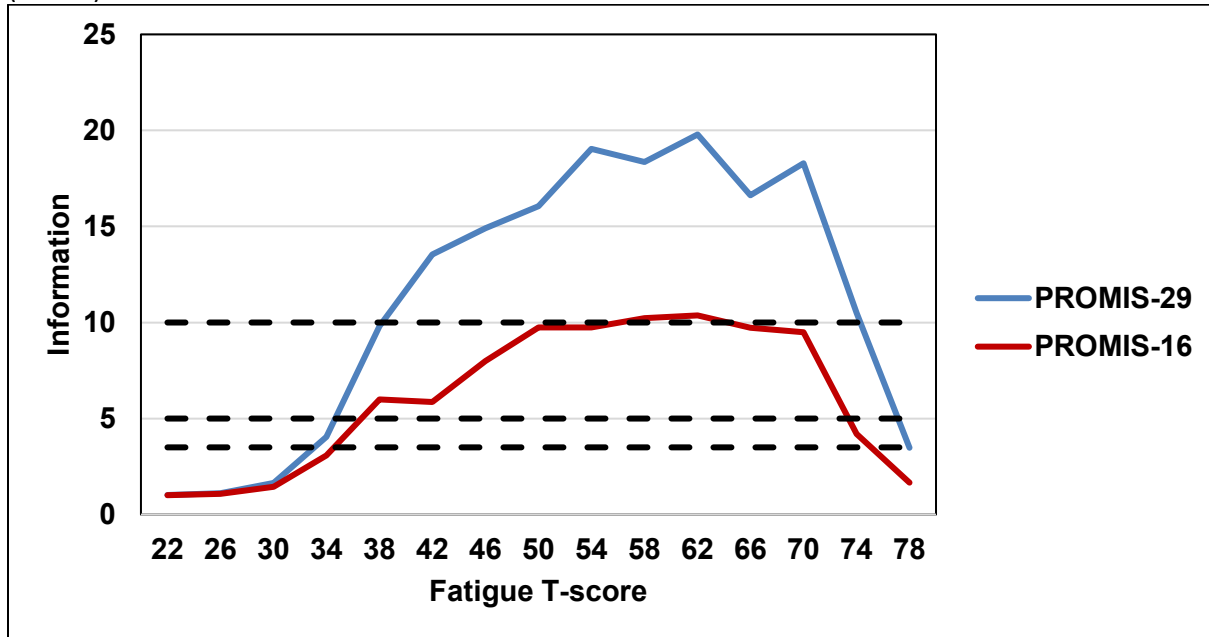


Figure 8. Information curves for Cognitive Function measured by the PROMIS-16 Profile v2.1 (PROPr) and a 5-item Cognitive Function – Abilities short form

