

NeuroQoL

Quality of Life in Neurological Disorders

Scoring Manual

Version 2.0

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Scoring Options

When data are collected through Assessment Center and the Assessment Center API (including users of the API like REDCap), Neuro-QoL computer adaptive tests (CATs) and short forms are automatically scored. When data are collected on paper or in other data collection systems, you can either utilize the Scoring Service or calculate scores by hand.

Scoring Service

The [Scoring Service](#) is a free, web-based application that calculates scores using item response theory. Each response to each item is utilized. It is the most accurate scoring method. The output of the Scoring Service includes Theta, T-score, and standard error for each respondent at each time point.

How to use the [HealthMeasures Scoring Service](#), powered by Assessment Center

1. Download the Input Template from the top right corner of the website.
2. Add your data (all respondents' individual answers to questions) for one Neuro-QoL measure to the template (multiple timepoints are okay)
3. Upload your spreadsheet to the HealthMeasures Scoring Service (if this is your first time, register as a new user)
4. Access your email to receive a spreadsheet with calculated scores

The HealthMeasures Scoring Service is especially useful when:

- You administered a short form, but not all participants answered every question
- Different groups of participants responded to different items
- You have created a new questionnaire using a subset of questions from one Neuro-QoL item bank

Manual Scoring

If you are not able to use the Scoring Service, you can calculate scores by hand. This is only available for existing short forms. CATs and custom short forms you constructed by selecting items from an item bank cannot use manual scoring.

Instructions for Manual Scoring

For a given short form, each response option is assigned a value (e.g., 1=Not at all). The PDF version of that measure has the correct values for each response option. You need to calculate a total summed raw score for each respondent. To find the total raw score, sum the values of the response to each question. For example, for an 8-item form that includes items with 5 response options ranging from 1 to 5, the lowest possible raw score is 8 (8 x 1) ; the highest possible raw score is 40 (8 x 5).

Use the conversion tables below to translate the total raw score into an IRT-based T-score for each participant. These conversions are accurate when all questions on the short form have been answered. Using Anxiety short-form as an example, which contains 8 items for both adult and pediatric versions, for adults, a raw score of 8 converts to a T-score of 36.4 with a standard error of 5.2. In order to calculate the 95% confidence interval for a score, you should use the following formula: $T\text{-Score} \pm (1.96 \times SE)$. Thus, for this example, we can say with 95% confidence that the actual score is within 1.96×5.2 or $T\text{-Score} = 36.4 \pm 10.2 = 26.2$ to 46.6.

Managing Missing Data

A score can be approximated if a participant skips a question. If items are missing, first check how many items were answered. For short forms with at least 5 items, confirm that 4 or 50% of items, whichever is greater, have been answered. For example, a 4-item short form can only be scored with responses to all 4 items. A 10-item short form can be scored as long as the participant answered at least 5 items. After confirming that enough

responses were provided, sum the response scores from the items that were answered. Multiply this sum by the total number of items in the short form. Finally, divide by the number of items that were answered. For example, if a respondent answered 5 of 8 questions and answered all items with the second lowest response option (2), you would sum all responses (10), multiply by the number of items in the short form (8) and divide by the number of items that were actually answered (5). Here $(10 \times 8) / 5 = 16$. If the result is a fraction, round up to the nearest whole number. This is a prorated raw score. However, this prorated score should be used with caution as the advantages of IRT calibrations and their contribution to precision is lost in the process.

Scoring Scales (Uncalibrated Sets of Items)

Scales (i.e., uncalibrated sets of items) can be scored by summing the values of the response to each item (i.e., finding the total raw score). For the 20-item pediatric Lower Extremity Function - Mobility, and Upper Extremity Function scales, the range of responses is 0 to 4, with 0 being the worst possible total score and 80 being the best. A score is obtained by adding up the values of the response to each question, then multiplying the total sum by 100 and dividing by 80, or Summed score $\times 100 / 80$.

If there are missing responses, multiply the sum of the item scores by the number of items in the subscale, then divide by the number of items answered, to obtain a prorated score. However, as explained above, this should be done only if at least half of the items were completed (e.g., at least 10 of the 20 items were answered). In the case of the adult 5-item Communication scale, when all five items are answered, the score is obtained by adding up the values of the response to each question, then subtracting 5 from the total sum, multiplying by 100 and dividing by 20, or $(\text{Summed score} - 5) \times 100 / 20$. In the case of 4 out of 5 questions being answered, a score can still be derived by prorating the sum score first, and then converting to the 0-100 scale. The prorated sum is obtained by multiplying the sum of the item scores by 5, then dividing by 4. Then, subtract 5 from the total prorated sum, multiply by 100 and divide by 20. Thus, when 4 of 5 items were answered, the 0-100 score is computed algebraically as:

$$[(\text{Raw sum score} \times 5 / 4) - 5] \times 100 / 20$$

We do not recommend prorating in cases where fewer than 4 of 5 (or 6) questions (or fewer than 50% of the total number of questions for scales longer than 6 items) have been answered.

Meaning of T-Scores

T-score distributions rescale raw scores into standardized scores with a mean of 50 and a standard deviation (SD) of 10. Thus, a person who has a T-score of 60 is one SD above the average of the referenced populations, either the US general population or clinical populations.

Important: *A higher Neuro-QoL T-score represents more of the concept being measured.* For positively-worded concepts like Ability to Participate in Social Roles and Activities, a T-score of 60 is one SD better than average. By comparison, for symptoms and other negatively-worded concepts like Fatigue and Depression, a T-score of 60 is one SD worse than the averaged reference population.

Reference Populations

For adults, a clinical reference population was used for Stigma, Fatigue, Emotional and Behavioral Dyscontrol, and Sleep Disturbance measures. All other adult measures used a general population reference sample. For children, a clinical reference population was used for stigma and pain measures. All other pediatric measures used a general reference population. Please note that, different from version 1, pediatric Fatigue and Cognitive Function were re-calibrated using a general population.

Table 1: Direction of Neuro-QoL Scores

	Domains
High scores indicate <u>worse</u> (undesirable) self-reported health	Anxiety, Depression, Anger, Fatigue, Emotional and Behavioral Dyscontrol, Sleep Disturbance, Stigma, Pain
High scores indicate <u>better</u> (desirable) self-reported health	Upper Extremity Function – Fine Motor, ADL, Lower Extremity Function - Mobility, Cognitive Function, Positive Affect and Well-Being, Ability to Participate in Social Roles and Activities, Satisfaction with Social Roles and Activities, Social Relations – Interaction with Peers, Social Relations – Interaction with Adults, Communication

Version 1 vs Version 2 Measures

Instead of two item banks (version 1) to assess adult cognitive function (Applied Cognition – Executive Function and Applied Cognition – General Concerns), version 2 has a single Cognitive Function item bank comprised of items measuring both executive function and general concerns.

Version 2.1 pediatric Fatigue and v2.0 Cognitive Function item banks were recalibrated using data obtained from a general population sample.

Cognitive Function v2.0 is recommended over v1.0. Adult Applied Cognition-Executive Function and Adult and Pediatric Applied Cognition-General Concerns instruments are available upon request. Pediatric Fatigue v2.1 is recommended. Pediatric Fatigue v2.0 is available upon request.

Scoring Tables

Use the following look-up tables to transform a raw total summed score to a T-score. Note that they are only accurate when all questions on the short form have been answered or you have prorated the score to account for missing responses (see instructions above). Approximations can be estimated by prorating the raw sum score based upon those questions that are answered, however this diminishes the advantages of IRT scoring.

Table 2: Adult Anxiety

Anxiety 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	36.4	5.2	25	59.3	1.8
9	42.1	2.9	26	60.1	1.8
10	44.3	2.4	27	60.9	1.8
11	45.9	2.1	28	61.8	1.8
12	47.3	2.0	29	62.6	1.7
13	48.4	1.9	30	63.4	1.7
14	49.5	1.9	31	64.2	1.7
15	50.5	1.8	32	65.1	1.8
16	51.4	1.8	33	65.9	1.8
17	52.3	1.8	34	66.8	1.8
18	53.3	1.8	35	67.8	1.9
19	54.2	1.8	36	68.9	2.0
20	55.0	1.8	37	70.0	2.1
21	55.9	1.8	38	71.5	2.3
22	56.8	1.8	39	73.3	2.7
23	57.6	1.8	40	76.8	3.8
24	58.4	1.8			

Table 3: Adult Depression

Depression 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	36.9	5.2	25	58.2	1.5
9	43.1	2.6	26	59.0	1.5
10	45.3	2.1	27	59.8	1.5
11	46.8	1.8	28	60.6	1.5
12	47.9	1.7	29	61.4	1.5
13	48.9	1.6	30	62.2	1.5
14	49.8	1.5	31	63.0	1.5
15	50.6	1.5	32	63.8	1.5
16	51.3	1.5	33	64.6	1.5
17	52.1	1.5	34	65.4	1.5
18	52.8	1.5	35	66.3	1.5
19	53.6	1.5	36	67.3	1.6
20	54.3	1.5	37	68.3	1.7
21	55.1	1.5	38	69.6	1.9
22	55.9	1.5	39	71.3	2.3
23	56.7	1.5	40	75.0	3.7
24	57.4	1.5			

Table 4: Adult Fatigue

Fatigue 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	29.5	4.4	25	52.3	1.7
9	34.1	2.7	26	53.3	1.7
10	36.5	2.2	27	54.4	1.7
11	38.2	2.0	28	55.4	1.7
12	39.5	1.9	29	56.5	1.8
13	40.7	1.8	30	57.6	1.8
14	41.8	1.7	31	58.8	1.8
15	42.8	1.7	32	59.9	1.8
16	43.8	1.7	33	61.1	1.8
17	44.7	1.7	34	62.3	1.8
18	45.6	1.7	35	63.5	1.8
19	46.5	1.7	36	64.8	1.9
20	47.4	1.7	37	66.2	2.0
21	48.4	1.7	38	67.9	2.2
22	49.3	1.7	39	70.1	2.7
23	50.3	1.7	40	74.1	4.0
24	51.3	1.8			

Table 5: Adult Upper Extremity Function – Fine Motor, Activities of Daily Living

Upper Extremity Function – Fine Motor, ADL 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	12.8	2.0	25	27.3	2.0
9	13.7	2.3	26	28.0	2.0
10	14.7	2.4	27	28.7	2.0
11	15.8	2.5	28	29.5	2.0
12	16.9	2.4	29	30.2	2.1
13	18.0	2.4	30	30.9	2.1
14	19.0	2.3	31	31.7	2.1
15	19.9	2.2	32	32.6	2.2
16	20.8	2.1	33	33.5	2.3
17	21.6	2.1	34	34.5	2.4
18	22.4	2.1	35	35.6	2.7
19	23.1	2.0	36	37.1	3.2
20	23.9	2.0	37	39.3	4.2
21	24.6	2.0	38	41.2	4.5
22	25.3	2.0	39	43.7	4.7
23	26.0	2.0	40	53.8	7.8
24	26.7	2.0			

Table 6: Adult Lower Extremity Function – Mobility

Lower Extremity Function - Mobility 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	16.5	3.0	25	35.2	2.1
9	19.2	2.8	26	36.0	2.1
10	21.1	2.6	27	36.7	2.1
11	22.6	2.4	28	37.5	2.1
12	23.9	2.3	29	38.3	2.1
13	25.1	2.3	30	39.1	2.2
14	26.2	2.2	31	39.9	2.2
15	27.2	2.2	32	40.8	2.3
16	28.1	2.1	33	41.7	2.4
17	29.0	2.1	34	42.8	2.5
18	29.9	2.1	35	43.9	2.6
19	30.7	2.1	36	45.2	2.9
20	31.5	2.1	37	46.7	3.1
21	32.2	2.1	38	48.6	3.3
22	33.0	2.1	39	51.2	3.8
23	33.7	2.0	40	58.6	6.4
24	34.5	2.1			

Table 7: Adult Cognitive Function v2.0

Cognitive Function v2.0 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	17.3	4.3	25	39.9	2.6
9	20.4	3.8	26	40.9	2.6
10	22.6	3.5	27	41.9	2.6
11	24.4	3.3	28	42.9	2.6
12	25.9	3.1	29	43.9	2.7
13	27.3	3	30	44.9	2.7
14	28.6	2.9	31	46	2.7
15	29.8	2.8	32	47.1	2.7
16	30.9	2.7	33	48.3	2.8
17	32	2.7	34	49.6	2.8
18	33	2.6	35	50.9	2.9
19	34	2.6	36	52.4	3.1
20	35	2.6	37	54.2	3.3
21	36	2.6	38	56.3	3.7
22	37	2.6	39	59	4.2
23	37.9	2.6	40	64.2	5.7
24	38.9	2.6			

Table 8: Adult Applied Cognition – Executive Function v1.0

Applied Cognition-Executive Function v1.0 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	13.1	2.2	25	31.7	2.2
9	14.4	2.5	26	32.5	2.2
10	16.1	2.7	27	33.3	2.2
11	17.9	2.7	28	34.2	2.3
12	19.5	2.6	29	35.0	2.3
13	20.8	2.6	30	35.9	2.3
14	22.0	2.5	31	36.9	2.3
15	23.1	2.4	32	37.9	2.4
16	24.1	2.4	33	38.9	2.4
17	25.1	2.3	34	40.1	2.5
18	26.0	2.3	35	41.3	2.7
19	26.8	2.2	36	42.8	2.9
20	27.7	2.2	37	44.6	3.2
21	28.5	2.2	38	46.8	3.6
22	29.3	2.2	39	50.0	4.3
23	30.1	2.2	40	57.6	6.7
24	30.9	2.2			

For version 1.0 instrument only. Version 2.0 instrument users should refer to the v2.0 scoring tables.

Table 9: Adult Applied Cognition – General Concerns v1.0

Applied Cognition-General Concerns v1.0 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	20.0	3.4	25	37.1	1.9
9	23.0	2.6	26	37.9	1.9
10	24.5	2.4	27	38.7	1.9
11	25.8	2.2	28	39.5	1.9
12	26.9	2.0	29	40.3	1.9
13	27.8	1.9	30	41.1	1.9
14	28.7	1.9	31	41.9	1.9
15	29.5	1.8	32	42.8	1.9
16	30.3	1.8	33	43.6	1.9
17	31.1	1.8	34	44.6	2.0
18	31.8	1.8	35	45.6	2.1
19	32.6	1.8	36	46.8	2.2
20	33.3	1.8	37	48.1	2.5
21	34.1	1.9	38	49.9	2.9
22	34.8	1.9	39	52.3	3.4
23	35.6	1.9	40	59.3	6.2
24	36.3	1.9			

For version 1.0 instruments only. Version 2.0 instrument users should refer to the v2.0 scoring tables.

Table 10: Adult Emotional and Behavioral Dyscontrol

Emotional and Behavioral Dyscontrol 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	32.2	4.9	25	60.8	2.4
9	37.2	3.5	26	62.1	2.4
10	39.9	3.0	27	63.3	2.4
11	42.0	2.7	28	64.5	2.4
12	43.7	2.6	29	65.8	2.4
13	45.3	2.5	30	66.9	2.3
14	46.7	2.4	31	68.1	2.3
15	48.1	2.4	32	69.3	2.3
16	49.4	2.4	33	70.6	2.4
17	50.7	2.4	34	71.8	2.4
18	52.0	2.4	35	73.1	2.4
19	53.2	2.4	36	74.5	2.5
20	54.5	2.4	37	76.0	2.7
21	55.8	2.4	38	77.7	2.8
22	57.0	2.4	39	79.8	3.1
23	58.3	2.4	40	82.6	3.3
24	59.6	2.4			

Table 11: Adult Positive Affect and Well-Being

Positive Affect and Well-Being 9-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
9	26.3	3.9	27	46.3	1.5
10	30.2	2.3	28	47.2	1.5
11	32.0	1.8	29	48.1	1.5
12	33.3	1.6	30	49.0	1.4
13	34.3	1.5	31	49.9	1.4
14	35.3	1.4	32	50.7	1.4
15	36.1	1.4	33	51.5	1.4
16	37.0	1.4	34	52.3	1.4
17	37.8	1.4	35	53.2	1.4
18	38.6	1.4	36	54.0	1.4
19	39.4	1.4	37	54.9	1.4
20	40.2	1.4	38	55.8	1.5
21	41.0	1.4	39	56.8	1.5
22	41.8	1.4	40	57.8	1.5
23	42.7	1.4	41	58.8	1.5
24	43.5	1.4	42	59.9	1.6
25	44.4	1.5	43	61.3	1.9
26	45.3	1.5	44	63.3	2.4
			45	68.0	4.5

Table 12: Adult Sleep Disturbance

Sleep Disturbance 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	32.0	5.9	25	61.6	3.4
9	36.3	5.0	26	62.8	3.4
10	39.1	4.7	27	63.9	3.4
11	41.7	4.4	28	65.1	3.4
12	43.8	4.2	29	66.4	3.4
13	45.6	4.0	30	67.6	3.5
14	47.3	3.9	31	68.9	3.5
15	48.9	3.8	32	70.3	3.5
16	50.4	3.7	33	71.7	3.6
17	51.8	3.6	34	73.2	3.6
18	53.1	3.6	35	74.7	3.7
19	54.4	3.5	36	76.4	3.8
20	55.6	3.5	37	78.2	3.9
21	56.8	3.5	38	80.2	3.9
22	58.0	3.4	39	82.2	3.8
23	59.2	3.4	40	84.2	3.5
24	60.4	3.4			

Table 13: Adult Ability to Participate in Social Roles and Activities (English)

Ability to Participate in Social Roles and Activities 8-item Short Form (Adult-English)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	24.1	3.8	25	41.3	1.4
9	27.7	2.5	26	42.0	1.4
10	29.5	2.1	27	42.7	1.4
11	30.8	1.8	28	43.4	1.4
12	31.8	1.6	29	44.0	1.4
13	32.7	1.5	30	44.7	1.4
14	33.5	1.5	31	45.4	1.4
15	34.3	1.4	32	46.1	1.4
16	35.0	1.4	33	46.8	1.4
17	35.7	1.4	34	47.5	1.5
18	36.4	1.4	35	48.3	1.5
19	37.1	1.4	36	49.2	1.6
20	37.8	1.4	37	50.2	1.8
21	38.5	1.4	38	51.6	2.2
22	39.2	1.4	39	53.4	2.6
23	39.9	1.4	40	60.2	5.8
24	40.6	1.4			

Table 14: Adult Ability to Participate in Social Roles and Activities (Spanish)

Ability to Participate in Social Roles and Activities 7-item Short Form (Adult-Spanish)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
7	24.5	3.9	22	41.6	1.5
8	28.2	2.5	23	42.4	1.5
9	30.0	2.1	24	43.2	1.5
10	31.4	1.8	25	43.9	1.5
11	32.6	1.7	26	44.7	1.5
12	33.5	1.6	27	45.5	1.5
13	34.4	1.5	28	46.2	1.5
14	35.2	1.5	29	47.0	1.5
15	36.0	1.5	30	47.9	1.6
16	36.8	1.5	31	48.8	1.7
17	37.6	1.5	32	49.9	1.9
18	38.4	1.5	33	51.3	2.3
19	39.2	1.5	34	53.2	2.6
20	40.0	1.5	35	60.1	5.8
21	40.8	1.5			

Note: Items NQPRF03 (I am able to do all of my regular family activities.) and NQPRF30 (I have to limit the things I do for fun outside my home.) were removed from the Spanish version due to dimensionality issues. NQPRF03 was in the SF, so the Spanish SF has one less item than the English SF.

Table 15: Adult Satisfaction with Social Roles and Activities

Satisfaction w/Social Roles and Activities 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	28.4	4.1	25	43.2	1.3
9	32.6	2.3	26	43.7	1.3
10	34.0	2.0	27	44.2	1.3
11	35.1	1.8	28	44.7	1.3
12	35.9	1.7	29	45.2	1.3
13	36.7	1.5	30	45.8	1.4
14	37.4	1.5	31	46.3	1.4
15	38.0	1.4	32	46.9	1.4
16	38.6	1.4	33	47.5	1.4
17	39.1	1.4	34	48.2	1.5
18	39.7	1.3	35	48.9	1.5
19	40.2	1.3	36	49.8	1.6
20	40.7	1.3	37	50.7	1.8
21	41.2	1.3	38	52.0	2.1
22	41.7	1.3	39	53.7	2.5
23	42.2	1.3	40	60.5	5.7
24	42.7	1.3			

Table 16: Adult Stigma

Stigma 8-item Short Form (Adult)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	39.2	5.8	25	61.6	1.9
9	45.7	3.3	26	62.4	1.9
10	47.6	3.0	27	63.2	1.9
11	49.3	2.6	28	64.0	1.9
12	50.6	2.4	29	64.8	1.9
13	51.7	2.2	30	65.7	2.0
14	52.8	2.1	31	66.6	2.0
15	53.7	2.0	32	67.5	2.0
16	54.6	2.0	33	68.5	2.1
17	55.4	2.0	34	69.6	2.1
18	56.2	1.9	35	70.8	2.2
19	57.0	1.9	36	72.2	2.3
20	57.8	1.9	37	73.7	2.4
21	58.5	1.9	38	75.6	2.6
22	59.3	1.9	39	78.1	3.0
23	60.1	1.9	40	81.5	3.5
24	60.8	1.9			

Table 17: Pediatric Stigma

Stigma 8-item Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	37.1	5.6	25	58.4	2.1
9	42.8	3.5	26	59.1	2.1
10	44.6	3.4	27	59.8	2.1
11	46.3	2.9	28	60.6	2.1
12	47.7	2.7	29	61.3	2.2
13	48.9	2.5	30	62.1	2.2
14	49.9	2.4	31	62.9	2.2
15	50.8	2.3	32	63.8	2.2
16	51.7	2.3	33	64.7	2.2
17	52.5	2.2	34	65.6	2.3
18	53.3	2.2	35	66.6	2.3
19	54.0	2.2	36	67.7	2.4
20	54.8	2.1	37	68.9	2.5
21	55.5	2.1	38	70.4	2.7
22	56.2	2.1	39	72.2	3.0
23	56.9	2.1	40	75.8	4.0
24	57.7	2.1			

Table 18: Pediatric Depression

Depression 8-item Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	36.4	5.4	25	60.7	1.9
9	42.0	3.3	26	61.8	1.9
10	44.3	2.9	27	62.8	1.9
11	46.1	2.4	28	63.8	1.9
12	47.6	2.2	29	64.7	1.8
13	48.8	2.0	30	65.7	1.8
14	49.9	1.9	31	66.6	1.8
15	50.9	1.9	32	67.5	1.8
16	51.8	1.8	33	68.5	1.8
17	52.8	1.8	34	69.4	1.9
18	53.7	1.8	35	70.5	1.9
19	54.6	1.8	36	71.6	2.1
20	55.6	1.9	37	72.9	2.2
21	56.6	1.9	38	74.5	2.5
22	57.6	1.9	39	76.3	2.8
23	58.7	1.9	40	79.4	3.6
24	59.7	1.9			

Table 19: Pediatric Anxiety

Anxiety 8-item Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	37.5	5.8	25	62.3	2.0
9	42.8	4.1	26	63.3	2.0
10	45.7	3.4	27	64.3	2.0
11	47.7	2.9	28	65.3	2.0
12	49.3	2.5	29	66.2	1.9
13	50.7	2.2	30	67.1	1.9
14	51.8	2.0	31	68.0	1.9
15	52.8	2.0	32	68.9	1.9
16	53.8	1.9	33	69.7	1.8
17	54.7	1.9	34	70.6	1.9
18	55.6	1.9	35	71.6	1.9
19	56.6	1.9	36	72.6	2.0
20	57.5	1.9	37	73.7	2.1
21	58.5	2.0	38	75.1	2.3
22	59.4	2.0	39	76.7	2.6
23	60.4	2.0	40	79.7	3.4
24	61.4	2.0			

Table 20: Pediatric Social Relations-Interaction with Peers

Social Relations- Interaction with Peers 8-item Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	18.5	3.5	25	39.8	2.2
9	21.5	3.0	26	41.0	2.1
10	23.5	2.6	27	42.2	2.1
11	25.0	2.4	28	43.4	2.1
12	26.3	2.2	29	44.6	2.0
13	27.4	2.1	30	45.7	2.0
14	28.5	2.0	31	46.8	2.0
15	29.4	2.0	32	47.9	2.0
16	30.4	2.0	33	49.0	2.1
17	31.3	2.0	34	50.2	2.1
18	32.2	2.0	35	51.4	2.2
19	33.2	2.0	36	52.8	2.3
20	34.2	2.1	37	54.4	2.5
21	35.2	2.1	38	56.4	2.9
22	36.3	2.2	39	59.1	3.5
23	37.5	2.2	40	64.5	5.3
24	38.6	2.2			

Table 21: Pediatric Cognitive Function

Cognitive Function 8-item Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	21.4	4.1	25	41.3	2.2
9	24.6	3.2	26	42.2	2.2
10	26.5	2.9	27	43.1	2.2
11	28.1	2.6	28	44.0	2.2
12	29.4	2.5	29	45.0	2.3
13	30.5	2.4	30	46.0	2.3
14	31.6	2.3	31	47.0	2.3
15	32.6	2.2	32	48.1	2.3
16	33.5	2.2	33	49.2	2.3
17	34.4	2.2	34	50.4	2.4
18	35.3	2.2	35	51.7	2.4
19	36.2	2.2	36	53.1	2.5
20	37.0	2.2	37	54.7	2.6
21	37.9	2.2	38	56.6	3.0
22	38.7	2.2	39	59.2	3.5
23	39.6	2.2	40	64.5	5.3
24	40.4	2.2			

Table 22: Pediatric Fatigue v2.1 (11-item bank version)

Fatigue v2.1 8-item Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	33.9	5.7	25	61.6	2.2
9	39.1	4.5	26	62.5	2.2
10	42.8	3.7	27	63.4	2.2
11	45.4	3.3	28	64.3	2.2
12	47.4	3.0	29	65.2	2.2
13	49.1	2.8	30	66.1	2.2
14	50.5	2.6	31	67.0	2.2
15	51.8	2.5	32	68.0	2.2
16	53.0	2.4	33	68.9	2.2
17	54.1	2.3	34	70.0	2.3
18	55.1	2.3	35	71.1	2.3
19	56.1	2.2	36	72.3	2.4
20	57.0	2.2	37	73.6	2.5
21	58.0	2.2	38	75.2	2.7
22	58.9	2.2	39	77.1	3.0
23	59.8	2.2	40	80.3	3.9
24	60.7	2.2			

Table 23: Pediatric Fatigue v1.0

Fatigue v1.0 8-item Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	33.3	5.7	24	61.1	3.0
9	38.4	4.6	25	62.1	3.0
10	41.7	4.2	26	63.1	3.0
11	44.2	3.9	27	64.2	3.0
12	46.2	3.7	28	65.2	3.0
13	48.0	3.6	29	66.3	3.0
14	49.5	3.5	30	67.3	3.0
15	51.0	3.4	31	68.4	3.0
16	52.3	3.3	32	69.6	3.1
17	53.5	3.2	33	70.8	3.1
18	54.7	3.2	34	72.1	3.1
19	55.8	3.1	35	73.5	3.2
20	56.9	3.1	36	75.0	3.3
21	58.0	3.1	37	76.7	3.4
22	59.0	3.1	38	78.8	3.6
23	60.1	3.0	39	81.6	3.8

For version 1.0 instruments only. Version 2.0 instrument users should refer to the v2.0 scoring tables.

Table 24: Pediatric Pain

Pain 8-item Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
10	38.5	5.6	31	60.7	1.5
11	45.0	3.0	32	61.2	1.5
12	47.2	2.5	33	61.8	1.5
13	48.7	2.2	34	62.3	1.5
14	49.9	2.0	35	62.8	1.5
15	51.0	1.9	36	63.3	1.5
16	51.8	1.8	37	63.9	1.5
17	52.6	1.7	38	64.4	1.5
18	53.4	1.7	39	65.0	1.5
19	54.0	1.6	40	65.6	1.6
20	54.7	1.6	41	66.2	1.6
21	55.3	1.6	42	66.8	1.6
22	55.9	1.6	43	67.5	1.6
23	56.4	1.5	44	68.2	1.7
24	57.0	1.5	45	69.0	1.7
25	57.6	1.5	46	69.9	1.8
26	58.1	1.5	47	70.9	2.0
27	58.6	1.5	48	72.2	2.2
28	59.2	1.5	49	73.9	2.5
29	59.7	1.5	50	77.4	3.6
30	60.2	1.5			

Table 25: Pediatric Anger

Anger Short Form (Pediatric)					
Raw Score	T-Score	SE	Raw Score	T-Score	SE
8	35.6	5.2	25	60.1	1.8
9	41.2	3.1	26	61.2	1.8
10	43.5	2.6	27	62.2	1.8
11	45.3	2.2	28	63.3	1.7
12	46.7	2.0	29	64.3	1.7
13	47.9	1.8	30	65.2	1.6
14	49.0	1.7	31	66.1	1.6
15	50.0	1.7	32	67.0	1.6
16	51.0	1.7	33	67.9	1.6
17	51.9	1.7	34	68.9	1.6
18	52.8	1.7	35	69.9	1.7
19	53.7	1.7	36	70.9	1.7
20	54.7	1.7	37	72.1	1.9
21	55.7	1.8	38	73.5	2.1
22	56.7	1.8	39	75.3	2.5
23	57.8	1.8	40	78.5	3.5
24	59.0	1.8			