



Scoring the CP-PRO Short Forms

Scoring the SF requires two steps. First, you must calculate the raw score and then you must use a transformation table to convert the raw score to a standardized score. The process of scoring is described below.

Calculating the Raw Score

Each response on the SF has a corresponding value between 0 (cannot do/unable to do) and 4 (easy/without difficulty) (Table 1). To calculate the raw score, sum the corresponding values of the responses to each SF item. The **raw score** is calculated by summing the numbers of each item on the SF. Figure 2 is an example demonstrating that the raw score of 17 was obtained by summing the numbers that correspond with the response option selected.

Table 1: Response Options and Corresponding Numerical Value

Parent Report Response	Numerical Score
Unable To Do	0
Much Difficulty	1
Some Difficulty	2
Little Difficulty	3
Without Difficulty	4

Converting the Raw Score to a Standardized Score

Each CP PRO SF has a unique transformation table that must be used to convert the raw score to a standardized score. SF score transformation tables are NOT interchangeable. In other words, every transformation table is different, and you must make sure that you use the one that has been developed for specific SFs. To ensure that the correct transformation table is used, each SF title is indicated directly above the raw score column (Figure 2).

Using the example from Figure 1 where the raw score was calculated to be 17, Figure 2 is the transformation table (for the CP PRO Activity Short Form) that would be used to convert the raw score to the standardized score (T-Score). Once the raw score is found in column 1 on the transformation table, column 2, labeled T-Scale, would give the corresponding Standardized score (T-Score). In this example, the Standardized Score (T-Score) is 52.12 as indicated in Figure 2.

Figure 1: Short Form Example

CP-PRO Activity Short Form (Parent/Caregiver Report)

Please select the best response for each item (Mark one box)	Without any difficulty	With a little difficulty	With some difficulty	With much difficulty	Unable to do	Item Score
1. Eating a meal includes using a fork and/or spoon to eat, and drinking from a cup. My child eats a meal.	<input checked="" type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	
2. Using a public restroom includes opening and closing bathroom stall doors, getting onto the toilet, managing clothes, wiping self, and washing hands. My child uses a public restroom.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	
3. Low playground equipment includes swings and small slides. My child climbs and moves on low playground equipment.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	
4. Dressing lower body includes putting on pants or skirt, doing the fasteners, and putting on socks and shoes. My child dresses his/her lower body.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	

Name/ID Number: _____

Date: _____

Please give the best answer you can to each item (Mark one box)	Without any difficulty	With a little difficulty	With some difficulty	With much difficulty	Unable to do	Item Score
5. Setting and clearing the table includes getting utensils, napkins and dishes out of the cabinet and placing them on the table and then clearing dirty dishes and utensils. My child sets and clears the table for family meals.	<input type="checkbox"/> 4	<input checked="" type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	
6. My child plays games or sports which involve kicking a ball with other children of similar age such as kickball or soccer.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	
7. High playground equipment includes monkey bars and jungle gyms. My child climbs and moves on high playground equipment.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 0	
8. My child rides a bicycle without training wheels in the neighborhood.	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 0	
Total Raw (Summed) Score						
Standardized (T-Scale) Score*						

*Convert the Raw Score to the Standardized Score using the Conversion Table on the next page.

Total Raw Score = 17

Figure 2: Transformation Table

The Short Form can be scored with missing values using the following process: 1.) calculate the mean score for the completed items; 2.) use the mean score value for the missing item(s) value; 3.) convert the raw score by using the conversion table as you would normally do. NOTE: if more than 50% of the items are missing, the score cannot be estimated.

Convert Raw (Summed) Score to Standardized (T-Scale) Score

Raw Score	T Score	T score SE
0	29.94	5.13
1	34.16	3.9
2	36.1	3.64
3	37.83	3.43
4	39.66	3.14
5	41.15	2.92
6	42.36	2.81
7	43.47	2.71
8	44.5	2.62
9	45.46	2.56
10	46.37	2.51
11	47.24	2.48
12	48.09	2.45
13	48.91	2.43
14	49.73	2.41
15	50.53	2.4
16	51.32	2.4
17	52.12	2.4
18	52.92	2.4
19	53.72	2.41
20	54.53	2.43
21	55.36	2.45
22	56.21	2.49
23	57.07	2.53
24	57.97	2.59
25	58.9	2.65
26	59.89	2.75
27	60.96	2.9
28	62.08	3.14
29	63.02	3.05
30	64.46	3.16
31	66.54	3.43
32	70.86	4.67

Why are CP PRO Short Form raw scores converted to standardized scores?

Raw scores are mathematically converted to a Standardized Score (T-Score) with the SF Score Transformation Tables (Appendix 6) so that scores can be compared across SFs and CATs.

How is the Standardized Score (T-Score) interpreted?

The Standardized Score (T-Score) places the participant's score on a common metric based on the calibration study sample of XXX children with CP. The Standardized Score (T-Score) has a mean of 50 with a standard deviation of 10. Standardized Scores (T-Scores) can be interpreted as follows:

- ◇ CP PRO SF scale score of 50: the child's ability is similar to the ability of the children included in the calibration sample
- ◇ CP PRO SF scale score of 40: the child's ability is 1 standard deviation below the ability of children included in the calibration sample
- ◇ CP PRO SF scale score of 60: the child's ability is 1 standard deviation above the ability of the children included in the calibration sample

Table 2 provides characteristics of the sample used in the calibration study.

Table 2: Calibration Study Sample Characteristics

Age Range	
Age Group Count	
ASIA Impairment Scale Count	
Diagnosis Count	
Motor Level Count	

What if a parent skips an item or several items on the SF?

The SF can be scored as long as the parent answers more than half of the items on the SF. Use the following procedure to score the SF when items are skipped:

- ◇ As shown in Figure 4, calculate the mean score for the completed items by:
 - a. Summing the values that correspond to the responses items that were answered
 - b. Divide the sum by the number of items that were answered
 - c. Round decimals to the closest whole number
- ◇ Enter the mean score as the score for each unanswered item
- ◇ Calculate the raw score as described above
- ◇ Use the transformation tables to convert the raw score to a standardized score, as described above.

Figures 3 and 4 provide an example of how to score a SF with skipped items.

Figure 3

Child Daily Routines and Self-Care, Paraplegia

Check the box that is most like you.	Cannot Do	Really Hard	Hard	A Little Hard	Easy	Item Score
1. Including fixing my clothes, set up, and clean up, <i>without</i> any splints, I can complete my bowel program.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input checked="" type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	2
2. I can wash my hair in the shower or bath.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
3. I can take off my socks.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
4. I can put on jeans.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	
5. I can put on my sneakers.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
6. I can clean my entire body in the shower or bath.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input checked="" type="checkbox"/> ₃	<input type="checkbox"/> ₄	3
7. I can put on gym shorts.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
8. I can put on my T-shirt (short-sleeve, pull-over)	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
9. When sitting in my wheelchair, I can bring my foot up, like when I put on socks or shoes.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
10. I can clean my upper body.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
11. I can ride a bike using my arms.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	
Total Raw Score						
Standardized (T-Scale) Score						

- | |
|---|
| <ol style="list-style-type: none"> 1. Sum of items answered: 33 2. Divide the sum of items answered (33) by the number of items answered (9): 3.67 3. Round to the closest whole number: 4 4. Mean Score: 4 |
|---|

Figure 4

Child Daily Routines and Self-Care, Paraplegia

Check the box that is most like you.	Cannot Do	Really Hard	Hard	A Little Hard	Easy	Item Score
1. Including fixing my clothes, set up, and clean up, <i>without</i> any splints, I can complete my bowel program.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input checked="" type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	2
2. I can wash my hair in the shower or bath.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
3. I can take off my socks.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
4. I can put on jeans.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
5. I can put on my sneakers.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
6. I can clean my entire body in the shower or bath.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input checked="" type="checkbox"/> ₃	<input type="checkbox"/> ₄	3
7. I can put on gym shorts.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
8. I can put on my T-shirt (short-sleeve, pull-over)	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
9. When sitting in my wheelchair, I can bring my foot up, like when I put on socks or shoes.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
10. I can clean my upper body.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
11. I can ride a bike using my arms.	<input type="checkbox"/> ₀	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input checked="" type="checkbox"/> ₄	4
Total Raw Score						41
Standardized (T-Scale) Score						57.96

5. Enter the mean score for unanswered items
 6. Calculate the Raw Score: 41
 7. Use the transformation table to convert the Raw Score to a Standardized Score (T-Scale): 57.96
 8. Standardized Score (T-Scale) = 57.96