Orthotic Patient-Reported Outcomes – Mobility (OPRO-M™)

Version 1.0

User Guide

English (US)

Updated November 2025

© 2023 University of Washington

Table of Contents

OPRO-M™ Copyright Notice

All OPRO-M™ instruments and materials are owned and provided by the University of Washington, © 2023. Please see https://opro-m.org for updates to OPRO-M™ instruments, scoring manuals, and additional citations.

Citing OPRO-M™

Please cite the OPRO-M™ 20-item Short Form as follows:

> Orthotic Patient-Reported Outcomes-Mobility (OPRO-M™) Version 1.0 (v1.0) 20-item Short Form. https://opro-m.org. Accessed on [*insert date*].

Please cite the OPRO-M™ 12-item Short Form as follows:

> Orthotic Patient-Reported Outcomes-Mobility (OPRO-M™) Version 1.0 (v1.0) 12-item Short Form. https://opro-m.org. Accessed on [*insert date*].

Please cite the OPRO-M™ Computerized Adaptive Test (CAT) as follows:

> Orthotic Patient-Reported Outcomes-Mobility (OPRO-M™) Version 1.0 (v1.0) Computerized Adaptive Test (CAT). https://opro-m.org. Accessed on [*insert date*].

Please cite the OPRO-M™ Users Guide as follows:

> Orthotic Patient-Reported Outcomes-Mobility (OPRO-M™) Version 1.0 (v1.0) Users Guide. 2023. https://opro-m.org. Accessed on [*insert date*].

OPRO-M™ Development Support

Development of the Orthotic Patient-Reported Outcomes-Mobility (OPRO-M™) was supported by the Office of the Assistant Secretary of Defense for Health Affairs, through the Orthotics and Prosthetics Outcomes Research Program (Award Number W81XWH-20-1-0258, PI: Hafner) and an American Orthotics and Prosthetics Association Research Award administered by the Center for Orthotics and Prosthetics Learning and Outcomes/Evidence-based Practice (Award Number EBP-043018, PI: Balkman).

OPRO-M™ Terms of Use

Please read our Terms of Use carefully. By accessing OPRO-M™ instruments, you agree to abide by the OPRO-M™ Terms of Use. The University of Washington reserves the right to update these Terms of Use at any time.

Information We Collect

Access to OPRO-M™ instruments requires users provide their name, affiliation, and email. Users information will not be shared, and will be used only to:

- Send users a direct link to OPRO-M™ instruments for future use (one time)
- Inform users of instrument updates or corrections (as needed)
- Provide users any updates to the OPRO-M™ Terms of Use (as needed)
- Inviting users to collaborate on research efforts (as needed)
- Request information from users about OPRO-M™ use (once per year)

License Agreement

Users may use OPRO-M™ instruments without a license agreement solely when they are used for:

- Research,
- Patient care, or
- Educational activities

Users must obtain a paid license agreement when integrating OPRO-M™ instruments into commercial technology products, including electronic medical record software, mobile applications, or access-limited instrument repositories. To obtain a paid license agreement, please contact the developers (info@opro-m.org).

Users who obtain OPRO-M instruments through technological systems that have secured a paid license agreement do not need additional licenses or permissions to use the OPRO-M™ instruments provided via the technological system.

Reproduction and Distribution

Users shall not reproduce OPRO-M™ instruments except as needed to conduct research, patient care, or educational activities. Users shall not distribute, publish, sell, license, or provide OPRO-M™ instruments or materials, by any means whatsoever, to third parties not involved with the users' activities without a written agreement from the developers (info@opro-m.org).

Modification

Users agree not to modify, amend, abridge, revise, adapt, or make derivative or alternative versions of OPRO-M™ instruments without prior written permission from the developers (info@opro-m.org).

Translation

Users agree not to translate OPRO-M™ instruments or materials into other languages without prior written permission from the developers (info@opro-m.org).

Indemnification

User agrees to indemnify and hold harmless the University of Washington, its officers, regents, employees, students and agents, against any and all claims, suits, losses, damages, costs, third party claims, fees (including Attorney' s fees) and expenses resulting from User's possession and/or use of OPRO-M™ instruments, including but not limited to any damages, losses or liabilities whatsoever with respect to death or injury to any person and damage to any property. This indemnification clause shall survive the termination of this Agreement.

OPRO-M™ instruments are provided 'AS IS', without any accompanying services or improvements. The University of Washington does not accept any liability resulting from use of any OPRO-M™ instruments. All OPRO-M™ instruments are provided with no warranties or representations of any kind as to the suitability of OPRO-M™ for a particular purpose.

Neither the University of Washington nor any party involved in creating, producing, or delivering OPRO-M™ instruments shall be liable for any damages, including without limitation, direct, incidental, consequential, indirect, or punitive damages arising out of access to, use of, alterations of, or inability to use OPRO-M™ instruments, or any errors or omissions in the content thereof.

Publications and Presentations

Any publication or presentation created from research, clinical, educational, or other use of OPRO-MTM instruments should include a statement that indicates which instrument(s), including version number, were used in the work. For recommended citations, please see the OPRO-MTM User Guide.

Furthering Development of OPRO-M™ Instruments

Use of OPRO-M™ instruments in clinical care, education, and research is encouraged, with the understanding that data collected will contribute to the overall body of knowledge. Clinical users are encouraged to share patient feedback, de-identified data, and/or experiences using OPRO-M™ instruments with the developers. Researchers are encouraged to disseminate data obtained from OPRO-M™ instruments in presentations and publications (see Publications and Presentations for details). The developers welcome feedback and opportunities to collaborate with all users.

Brief Overview of the Orthotic Patient-Reported Outcomes - Mobility (OPRO-M™)

Construct: OPRO-M™ instruments measure orthosis users' mobility (i.e., the ability to move from one place to another without help from another person). Individual OPRO-M™ questions assess respondents' perceived ability to carry out specific activities that require use of lower limbs. OPRO-M™ questions cover movements that range from basic ambulation (e.g., walking a short distance in their home) to complex activities (e.g., going for an all-day hike). OPRO-M™ response options reflect the degree of difficulty with which respondents report they can carry out these activities.

Intended applications: OPRO-M™ instruments are intended for use in research and clinical care.

Intended population: OPRO-M™ instruments are intended for use with adults (ages 18 and older) who use an orthosis that extends from the foot to the ankle or higher.

Current version: The current version of the OPRO-M™ item bank is Version 1.0, as of July 1, 2022. We recommend Version 1.0 for measuring mobility in people who use an orthosis for ambulation.

Formats: OPRO-M™ instruments are based on a set of calibrated questions called the OPRO-M™ item bank. The OPRO-M™ short forms included in this guide are subsets of questions in the OPRO-M™ item bank. Short forms are available in different lengths depending on the purpose and reliability required by the researcher or clinician. All short forms are suited to measuring mobility across a range of orthosis users. OPRO-M™ Version 1.0 short forms are available in either a 20-item or 12-item. An OPRO-M™ Computerized Adaptive Test (CAT) is also available on the OPRO-M™ website (https://opro-m.org/instruments/). The OPRO-M™ CAT offers an optimal combination of high measurement precision and low administrative burden.

Administration and scoring time: OPRO-M™ short forms require approximately 2-3 minutes to administer and 1-2 minutes to score. The OPRO-M™ CAT requires less time to administer and automatically produces a score.

Score: OPRO-M™ Version 1.0 instruments provide a T-score that ranges from 17.5 to 81.7, depending on the form of the instrument selected:

- 20-item mobility short form: 19.4 to 79.7
- 12-item mobility short form: 22.3 to 78.9

Score interpretation: OPRO-M™ Version 1.0 T-scores are referenced to the development sample (n=1036 lower limb orthosis users) described in this manual. A T-score has a mean of 50 and a standard deviation (SD) of 10. A OPRO-M™ T-score of 50 represents the mean mobility reported by the development sample (i.e., people who use an orthosis). A higher OPRO-M™ T-score corresponds to greater mobility. Individual OPRO-M™ T-scores may also be compared to those reported by the development sample or to those reported by subgroups (by paresis type, orthosis level, sex, and age) within the development sample. See tables 1-7 below for additional information on the development sample.

Languages: OPRO-M™ instruments were originally developed in United States English. Please see https://opro-m.org/translations for additional information for OPRO-M™ instrument translations.

Introduction

The Orthotic Patient-Reported Outcomes - Mobility (OPRO-M™) is a self-report instrument for measuring mobility of adults who use an orthosis. It has been rigorously developed using modern psychometric methodology and is intended for use in clinical practice and research. This guide will assist you in the selection of an OPRO-M™ short form, administration and scoring of the instruments, and interpretation of the scores.

OPRO-M™ instruments measure orthosis users' mobility (i.e., the ability to move from one place to another without help from another person). OPRO-M™ questions assess respondents' perceived ability to carry out actions ranging from household ambulation to outdoor recreational activities. The described activities relate to two primary forms of movement, locomotion (i.e., movement in a continuous, repeatable pattern) and/or postural transitions (i.e., movement from one position to another or one type of activity to another). Activities described by OPRO-M™ questions are often qualified by language that describes the setting or situation in which the activity would be performed (e.g., standing up from a chair *without* using the armrests). Unintentional movements (e.g., falls) and movements performed with the physical assistance of another person (e.g., assisted transfers) are not intended to be measured with this instrument. Further, OPRO-M™ instruments are not intended to measure mobility with seated or wheeled assistive devices (e.g., a wheelchair).

All questions in the OPRO-M™ item bank are *difficulty* questions that begin with "Are you currently able to…," followed by a description of an activity. Responses reflect the difficulty with which the respondents' report they could perform the described activity. Response options for all items are "unable to do," "with much difficulty," "with some difficulty," "with a little difficulty," and "without any difficulty." The time frame for the OPRO-M™ is "currently", and therefore respondents' current perception of their mobility is measured by these instruments.

Although OPRO-M™ instruments have been purposefully developed to be used with a wide range of orthosis users (see "Development Sample"), they have not yet been thoroughly tested across the entire population of persons who use an orthosis. For example, psychometric functioning of OPRO-M™ instruments has not yet been investigated with children or adolescents who use lower limb orthoses. OPRO-M™ users are encouraged to check for updates to OPRO-M™ instruments, scoring guides, or additional evidence of validity at https://opro-m.org.

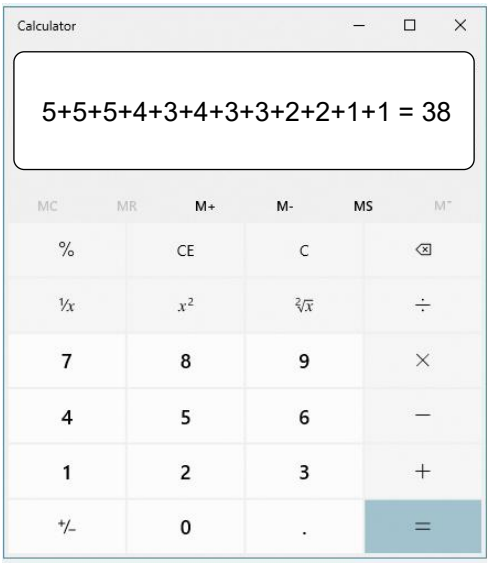
Scoring Complete OPRO-M™ Short Forms

This section of the guide describes how to score OPRO-M™ short forms when all questions on the short form have been answered. If any questions have been skipped by the respondent, please refer to the section of this guide titled "Scoring Incomplete OPRO-M™ Short Forms."

Scoring an OPRO-M™ short form will produce a T-score. *Raw scores*, which are obtained by summing responses to each question, should only be used to look up OPRO-M™ *T-scores* using the tables in this manual. Only OPRO-M™ T-scores should be reported. T-scores are valid and comparable measures of mobility, but raw scores are not. To obtain an OPRO-M™ T-score, follow the steps below:

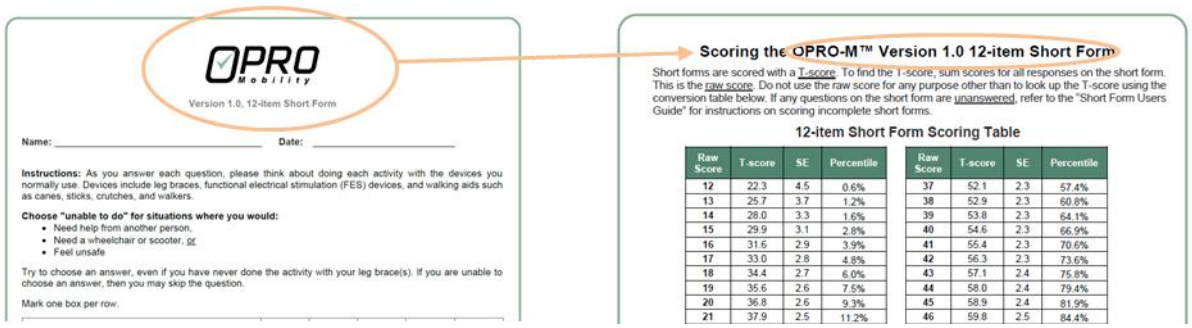
Step 1: Calculate the Raw Score. Each OPRO-M™ question has five response options. Responses to each question on the short form are scored from 1 to 5 (i.e., without any difficulty = 5, with a little difficulty = 4, with some difficulty = 3, with much difficulty = 2, unable to do = 1). To find the raw score, sum the values of the responses to each question on the short form. Use of a calculator is recommended. Raw scores range from 12 to 60 for the 12-item short form and 20 to 100 for the 20-item short form.

Are you currently able to…	Without any difficulty	With a little difficulty	With some difficulty	With much difficulty	Unable to do
1. Walk a short distance in your home?	☑ (5)	☐ (4)	☐ (3)	☐ (2)	☐ (1)
2. Take 2 steps backwards?	☑ (5)	☐ (4)	☐ (3)	☐ (2)	☐ (1)
3. Sweep the floor?	☑ (5)	☐ (4)	☐ (3)	☐ (2)	☐ (1)
4. Step up and down curbs?	☐ (5)	☑ (4)	☐ (3)	☐ (2)	☐ (1)
5. Walk across a large parking lot?	☐ (5)	☐ (4)	☑ (3)	☐ (2)	☐ (1)
6. Walk over loose gravel?	☐ (5)	☑ (4)	☐ (3)	☐ (2)	☐ (1)
7. Walk on uneven grass?	☐ (5)	☐ (4)	☑ (3)	☐ (2)	☐ (1)
8. Keep up with others when walking?	☐ (5)	☐ (4)	☑ (3)	☐ (2)	☐ (1)
9. Climb several flights of stairs?	☐ (5)	☐ (4)	☐ (3)	☑ (2)	☐ (1)
10. Climb a flight of stairs without a handrail?	☐ (5)	☐ (4)	☐ (3)	☑ (2)	☐ (1)
11. Go for an all-day hike?	☐ (5)	☐ (4)	☐ (3)	☐ (2)	☑ (1)
12. Run on level ground?	☐ (5)	☐ (4)	☐ (3)	☐ (2)	☑ (1)



Example: A respondent answers all questions on the OPRO-M™ 12-item short form. A raw score of 26 is calculated from the responses provided.

Step 2: Choose the Appropriate Conversion Table. Each OPRO-M™ short form has a unique scoring table. Only the table that corresponds to the selected short form will produce the correct OPRO-M™ T-score. Choose the scoring table that corresponds to the short form you administered (e.g., choose the 12-item scoring table if you administered the 12-item mobility short form).



Step 3: Look Up the T-score. Look up the OPRO-M™ T-score that corresponds to the raw score you calculated in Step 1 on the conversion table. To document the OPRO-M™ T-score, enter it in the field provided (located below the selected conversion table). If any questions have been skipped by the respondent, score the survey using the instructions found under "Scoring Incomplete OPRO-M™ Short Forms."

12-item Short Form Scoring Table

Raw Score	T-score	SE	Percentile
12	22.3	4.5	0.6%
13	25.7	3.7	1.2%
14	28.0	3.3	1.6%
15	29.9	3.1	2.8%
16	31.6	2.9	3.9%
17	33.0	2.8	4.8%
18	34.4	2.7	6.0%
19	35.6	2.6	7.5%
20	36.8	2.6	9.3%
21	37.9	2.5	11.2%
22	38.9	2.5	12.8%
23	40.0	2.5	15.0%
24	40.9	2.4	17.1%
25	41.9	2.4	20.4%
26	42.8	2.4	22.4%
27	43.7	2.3	24.6%
28	44.6	2.3	27.8%
29	45.5	2.3	31.9%
30	46.4	2.3	35.3%
31	47.2	2.3	37.9%
32	48.0	2.3	41.1%
33	48.9	2.2	44.7%
34	49.7	2.2	47.7%
35	50.5	2.2	51.5%
36	51.3	2.2	54.1%

Raw Score	T-score	SE	Percentile
37	52.1	2.3	57.4%
38	52.9	2.3	60.8%
39	53.8	2.3	64.1%
40	54.6	2.3	66.9%
41	55.4	2.3	70.6%
42	56.3	2.3	73.6%
43	57.1	2.4	75.8%
44	58.0	2.4	79.4%
45	58.9	2.4	81.9%
46	59.8	2.5	84.4%
47	60.7	2.5	87.4%
48	61.7	2.6	89.9%
49	62.7	2.7	91.6%
50	63.7	2.8	92.5%
51	64.7	2.8	93.7%
52	65.8	3.0	95.3%
53	67.0	3.1	96.2%
54	68.2	3.2	97.0%
55	69.5	3.4	97.7%
56	70.9	3.7	98.4%
57	72.2	3.8	98.7%
58	73.8	3.9	99.2%
59	75.7	4.1	99.6%
60	78.9	4.7	99.8%

Record the OPRO-M T-score here:

OPRO-M T-score
52.9

Example: The raw score of 38 on the OPRO-M™ 12-item short form produces a T-score of 52.9. The table also indicates the respondent reports higher mobility than 63.3% of the OPRO-M™ development sample.

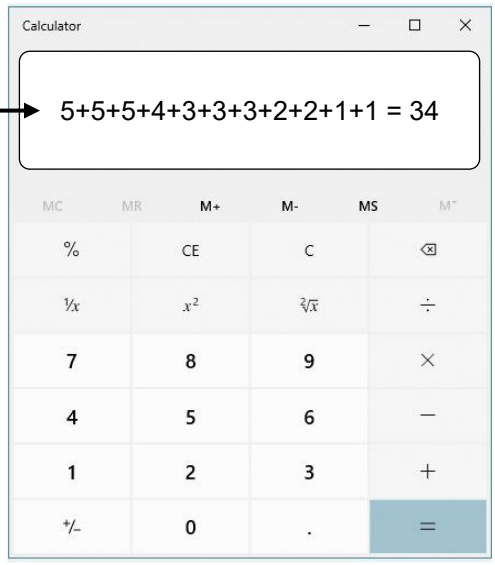
Scoring Incomplete OPRO-M™ Short Forms

This section of the guide describes how to score OPRO-M™ short forms when questions on the short form have been skipped. If all questions have been answered by the respondent, please refer to the section of this guide titled "Scoring Complete OPRO-M™ Short Forms."

OPRO-M™ T-scores can be *approximated* if a respondent skips one or more questions. Scoring OPRO-M™ short forms with fewer than half of the responses completed is not recommended. Therefore, first verify that at least 6 questions on the OPRO-M™ 12-item short form or at least 10 items on the 20-item short form have been answered. Then, follow the steps below to estimate a T-score.

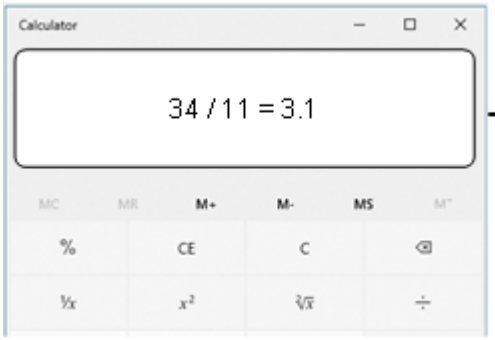
Step 1: Calculate the Interim Raw Score. Sum the values of responses to all questions that were answered on the short form. This is your interim raw score.

Are you currently able to…	Without any difficulty	With a little difficulty	With some difficulty	With much difficulty	Unable to do
1. Walk a short distance in your home?	☑ (5)	☐ (4)	☐ (3)	☐ (2)	☐ (1)
2. Take 2 steps backwards?	☑ (5)	☐ (4)	☐ (3)	☐ (2)	☐ (1)
3. Sweep the floor?	☑ (5)	☐ (4)	☐ (3)	☐ (2)	☐ (1)
4. Step up and down curbs?	☐ (5)	☑ (4)	☐ (3)	☐ (2)	☐ (1)
5. Walk across a large parking lot?	☐ (5)	☐ (4)	☑ (3)	☐ (2)	☐ (1)
6. Walk over loose gravel?	☐ (5)	☐ (4)	☐ (3)	☐ (2)	☐ (1)
7. Walk on uneven grass?	☐ (5)	☐ (4)	☑ (3)	☐ (2)	☐ (1)
8. Keep up with others when walking?	☐ (5)	☐ (4)	☑ (3)	☐ (2)	☐ (1)
9. Climb several flights of stairs?	☐ (5)	☐ (4)	☐ (3)	☑ (2)	☐ (1)
10. Climb a flight of stairs without a handrail?	☐ (5)	☐ (4)	☐ (3)	☑ (2)	☐ (1)
11. Go for an all-day hike?	☐ (5)	☐ (4)	☐ (3)	☐ (2)	☑ (1)
12. Run on level ground?	☐ (5)	☐ (4)	☐ (3)	☐ (2)	☑ (1)



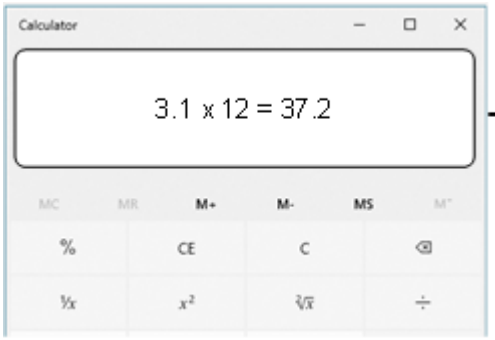
Example: A respondent skips question 6 on the OPRO-M™ 12-item short form. An interim raw score of 34 is calculated from the other five responses provided.

Step 2: Calculate the Mean Score. Divide the interim raw score (Step 1) by the number of items that were answered. This is your mean score.



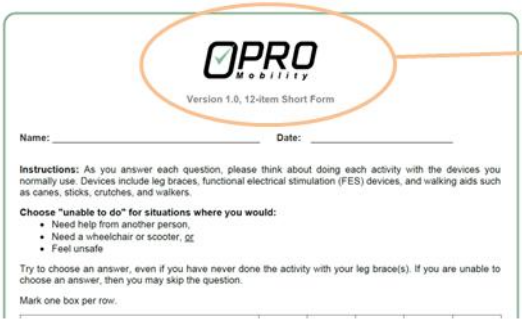
Example: The interim raw score of 34 that was obtained from the 11 provided responses produces a mean score of 3.1.

Step 3: Calculate an Adjusted Raw Score. Multiply the mean score (Step 2) by the total number of items on the short form (i.e., 12 or 20). If the score is not an integer (i.e., whole number), round up to the next highest integer. This is your adjusted raw score.



Example: The mean score of 3.1 produces an adjusted raw score of 38 (i.e., an adjusted raw score of 37.2 rounds up to 38).

Step 4: Choose the Appropriate Scoring Table. Each OPRO-M™ short form has a unique scoring table. Only the table that corresponds to the selected short form will produce the correct OPRO-M™ T-score. Choose the scoring table that corresponds to the short form you administered (e.g., choose the 12-item scoring table if you administered the 12-item short form).


OPRO Mobility

Version 1.0, 12-item Short Form

Name: _____ Date: _____

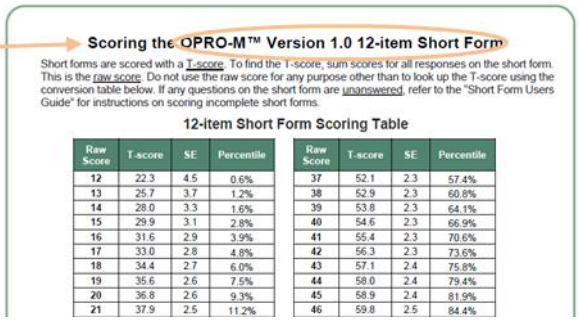
Instructions: As you answer each question, please think about doing each activity with the devices you normally use. Devices include leg braces, functional electrical stimulation (FES) devices, and walking aids such as canes, sticks, crutches, and walkers.

Choose "unable to do" for situations where you would:

- Need help from another person,
- Need a wheelchair or scooter, or
- Feel unsafe

Try to choose an answer, even if you have never done the activity with your leg brace(s). If you are unable to choose an answer, then you may skip the question.

Mark one box per row.


Scoring the OPRO-M™ Version 1.0 12-item Short Form

Short forms are scored with a T-score. To find the T-score, sum scores for all responses on the short form. This is the raw score. Do not use the raw score for any purpose other than to look up the T-score using the conversion table below. If any questions on the short form are unanswered, refer to the "Short Form Users Guide" for instructions on scoring incomplete short forms.

12-item Short Form Scoring Table

Raw Score	T-score	SE	Percentile	Raw Score	T-score	SE	Percentile
12	22.3	4.5	0.6%	37	52.1	2.3	57.4%
13	25.7	3.7	1.2%	38	52.9	2.3	60.8%
14	28.0	3.3	1.6%	39	53.8	2.3	64.1%
15	29.9	3.1	2.8%	40	54.6	2.3	66.9%
16	31.6	2.9	3.9%	41	55.4	2.3	70.6%
17	33.0	2.8	4.8%	42	56.3	2.3	73.6%
18	34.4	2.7	6.0%	43	57.1	2.4	75.8%
19	35.6	2.6	7.5%	44	58.0	2.4	79.4%
20	36.8	2.6	9.3%	45	58.9	2.4	81.9%
21	37.9	2.5	11.2%	46	59.8	2.5	84.4%

Step 5: Look Up the T-score. Look up the OPRO-M™ T-score that corresponds to the adjusted raw score you calculated in Step 3. Note that the standard error (SE) associated with an approximated OPRO-M™ T-score may be greater than that shown in the table. To document the OPRO-M™ approximated T-score, enter it in the field provided (located below the selected conversion table). If all questions have been answered by the respondent, score the survey using the instructions found under "Scoring Complete OPRO-M™ Short Forms."

12-item Short Form Scoring Table

Raw Score	T-score	SE	Percentile
12	22.3	4.5	0.6%
13	25.7	3.7	1.2%
14	28.0	3.3	1.6%
15	29.9	3.1	2.8%
16	31.6	2.9	3.9%
17	33.0	2.8	4.8%
18	34.4	2.7	6.0%
19	35.6	2.6	7.5%
20	36.8	2.6	9.3%
21	37.9	2.5	11.2%
22	38.9	2.5	12.8%
23	40.0	2.5	15.0%
24	40.9	2.4	17.1%
25	41.9	2.4	20.4%
26	42.8	2.4	22.4%
27	43.7	2.3	24.6%
28	44.6	2.3	27.8%
29	45.5	2.3	31.9%
30	46.4	2.3	35.3%
31	47.2	2.3	37.9%
32	48.0	2.3	41.1%
33	48.9	2.2	44.7%
34	49.7	2.2	47.7%
35	50.5	2.2	51.5%
36	51.3	2.2	54.1%

Raw Score	T-score	SE	Percentile
37	52.1	2.3	57.4%
38	52.9	2.3	60.8%
39	53.8	2.3	64.1%
40	54.6	2.3	66.9%
41	55.4	2.3	70.6%
42	56.3	2.3	73.6%
43	57.1	2.4	75.8%
44	58.0	2.4	79.4%
45	58.9	2.4	81.9%
46	59.8	2.5	84.4%
47	60.7	2.5	87.4%
48	61.7	2.6	89.9%
49	62.7	2.7	91.6%
50	63.7	2.8	92.5%
51	64.7	2.8	93.7%
52	65.8	3.0	95.3%
53	67.0	3.1	96.2%
54	68.2	3.2	97.0%
55	69.5	3.4	97.7%
56	70.9	3.7	98.4%
57	72.2	3.8	98.7%
58	73.8	3.9	99.2%
59	75.7	4.1	99.6%
60	78.9	4.7	99.8%

Record the OPRO-M T-score here:

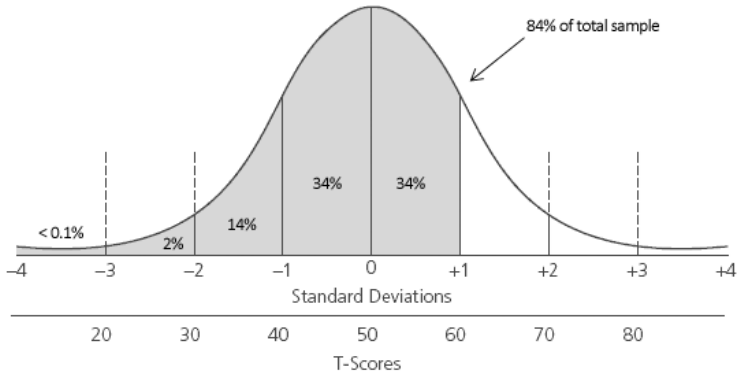
OPRO-M T-score
52.9

Example: The raw score of 38 on the 12-item short form produces an OPRO-M™ T-score of 52.9. The table also indicates the respondent reports higher mobility than 63.3% of the OPRO-M™ development sample.

Interpreting OPRO-M™ T-scores

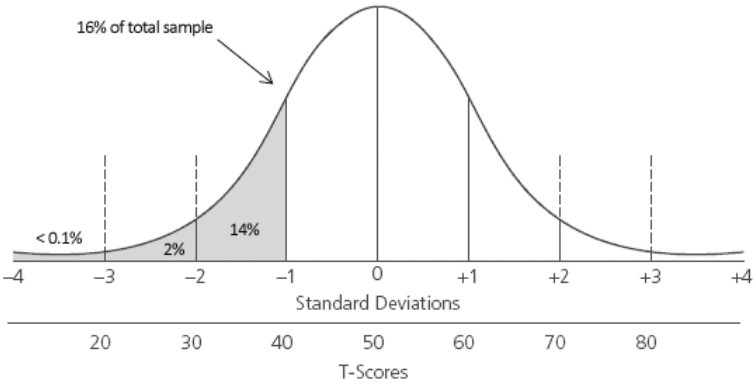
The OPRO-M™ T-score is a standardized score with a mean of 50 and a standard deviation (SD) of 10. A higher OPRO-M™ T-score represents a higher level of mobility. The highest possible OPRO-M™ T-score is 81.7 (i.e., when a respondent reports "without any difficulty" for all 39 questions in the OPRO-M™ Version 1.0 item bank). The lowest possible Version 1.0 T-score is 17.5 (i.e., when a respondent reports "unable to do" for all 39 questions in the OPRO-M™ Version 1.0 item bank). T-scores are also comparable across all OPRO-M™ instruments. This means, for example, that an OPRO-M™ T-score obtained by a respondent using the 12-item short form may be compared directly to a score obtained by a respondent using the 20-item short form.

OPRO-M™ T-scores are centered on 50. A T-score of 50 is equivalent to the mean score reported by orthosis users included in the OPRO-M™ development sample described in this guide. Based on a normal distribution of OPRO-M™ T-scores, approximately 50% of individuals who use an orthosis that extends from the foot to the ankle or higher are expected to have a T-score of 50 or higher. A respondent that receives a T-score of 60 has reported a level of mobility approximately 1 standard deviation *above* the mean reported by orthosis users in the development sample. Therefore, approximately 84% of the people in the OPRO-M™ development sample reported lower mobility than that respondent.



An OPRO-M™ T-score of 60 indicates that approximately 84 percent of people in the development sample reported lower mobility, as reflected by the shaded area.

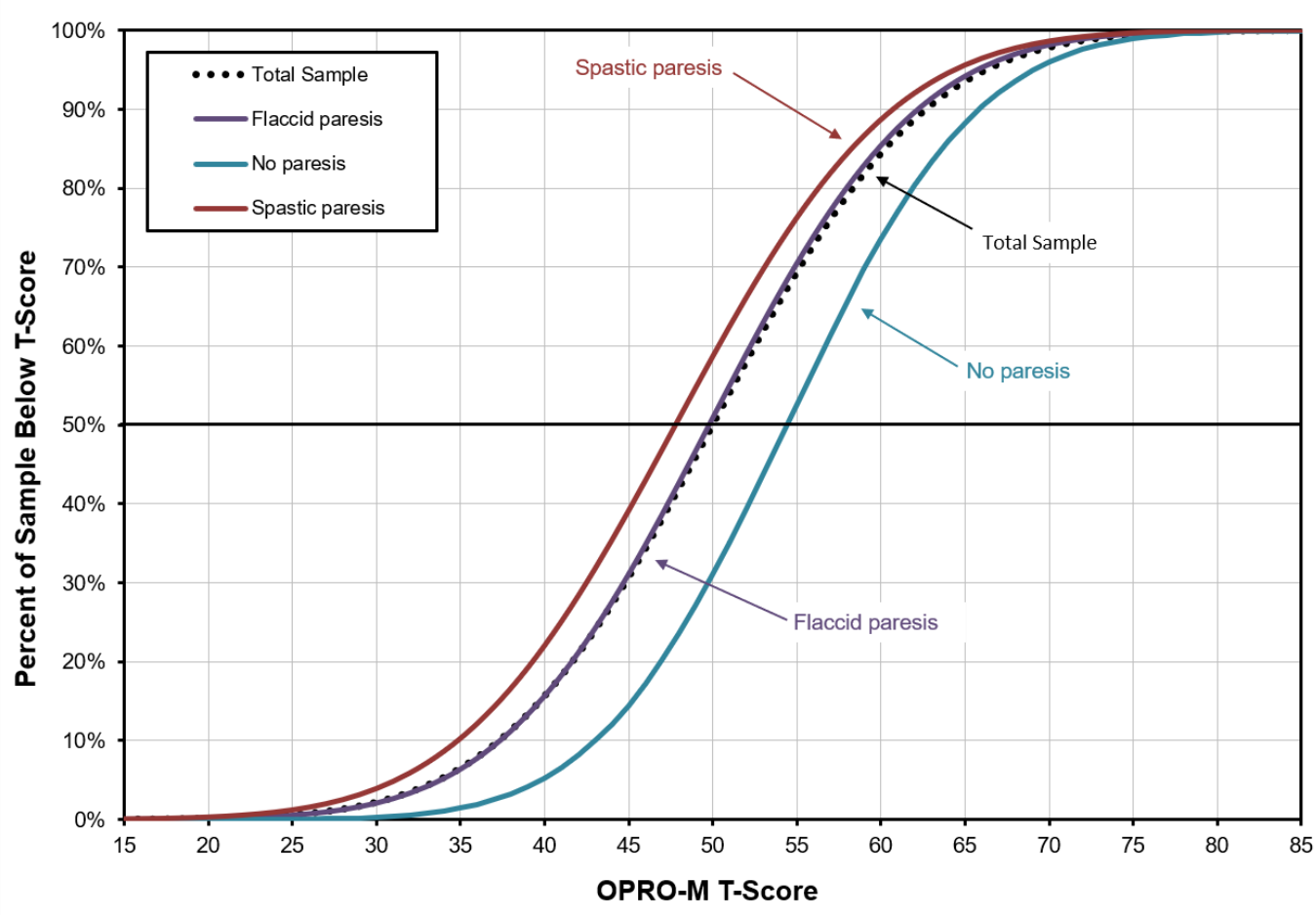
Conversely, a respondent that receives a T-score of 40 has reported their mobility to be about one standard deviation *below* the mean reported by orthosis users in the development sample. This means that only about 16% of the OPRO-M™ study sample reported their mobility to be lower than that respondent.



An OPRO-M™ T-score of 40 indicates that approximately 16 percent of people in the development sample reported lower mobility, as reflected by the shaded area.

OPRO-M™ Version 1.0 T-score interpretation

Interpretation of OPRO-M™ T-scores may be aided by comparison to scores reported by the subgroups within the development sample (e.g., individuals with health conditions associated with spastic paresis of the ankle dorsiflexors and those with health conditions associated with flaccid paresis). Comparison to the development sample scores (or subsamples scores) allows individual OPRO-M™ T-scores to be interpreted in context of persons with similar functional presentation. Figure 3 allows OPRO-M™ users to cross-reference OPRO-M™ T-scores with an estimated location within the development sample.



Distribution of OPRO-M™ T-scores for the development sample and paresis type subgroups.

Example: A respondent with spastic paresis due to a stroke receives a OPRO-M™ T-score of 50. Figure 3 indicates that this score is equivalent or higher than approximately 50% of the total development sample (black dashed line) and is equivalent or higher than about 60% of those with a health condition associated with spastic paresis. Thus, this respondent has higher mobility than most of those with this type of paresis.

Selecting OPRO-M™ Instruments

As of July 2022 (i.e., release of the OPRO-M™ Version 1.0 item bank), we recommend use of OPRO-M™ Version 1.0 for all applications. The OPRO-M™ Version 1.0 item bank contains 39 questions. Two fixed-length formats (i.e., OPRO-M™ short forms) are available: a 12-item short form and a 20-item short form. All items on the OPRO-M™ 12-item short form are included on the 20-item short form. OPRO-M™ can also be administered as a Computerized Adaptive Test (CAT) using a software algorithm and the OPRO-M™ item parameters.

T-scores obtained with use of all OPRO-M™ short forms are highly correlated with T-scores obtained with use of all 39 OPRO-M™ questions (12-item short form: $r_c = 0.968$; 20-item short form: $r_c = 0.987$). OPRO-M™ short forms may therefore be used with confidence in most situations. OPRO-M™ short forms generally require about two (12-item) or three (20-item) minutes to administer. They require about one (12-item) or two (20-item) minutes to score.

OPRO-M 12-item short form has acceptable measurement precision (standard error less than 3.0) between scores of 31.6 and 64.7. The OPRO-M™ 20-item short form provides higher measurement precision, (acceptable precision between scores of 28.1 and 70.0), but also has higher response burden. Selection of an OPRO-M™ instrument should be based on the importance of the decision(s) that will be made from the obtained T-score(s). The greater the consequences of the decision to be made, the more important it is to select an instrument with greater measurement precision. OPRO-M™ 12-item short form is recommended in most situations, including where mobility is a primary outcome (e.g., comparative effectiveness studies) or when important treatment decisions are to be made (e.g., selecting an orthosis for a patient). However, OPRO-M™ 12-item short form measures with less precision at the extreme ends of the mobility continuum. Therefore, the OPRO-M™ 20-item short form is more suitable when measuring individuals with very low or very high mobility. The 20-item short form may also be more appropriate for research when comparing minor changes in mobility.

T-scores obtained with use of the OPRO-M™ CAT (with the default settings) are also highly correlated with T-scores obtained with use of all 39 OPRO-M™ questions ($r_c = 0.965$). The OPRO-M™ CAT dynamically selects items to administer based on responses to previous items. Several CAT settings can be adjusted, including the minimum number of items, and maximum number of items, and standard error (SE) threshold. The default OPRO-M™ CAT settings include a minimum of four items, a maximum of 12 items, and SE threshold of 3.0. The OPRO-M™ CAT is the most efficient way to administer OPRO-M, however different items may be administered each time. Therefore, when item-level responses are of clinical value, short forms may be a better option.

Note: To simplify the selection of OPRO-M™ instruments, short forms with fewer items were intentionally not included in the user guide. However, brief short forms (e.g., 6- and 4-item forms) may be well suited to situations where mobility is a secondary outcome (e.g., epidemiological studies) or when patients' health is being monitored (e.g., outcomes databases). Please contact the developers to access these brief short forms and corresponding scoring tables.

OPRO-M™ Development Sample

The OPRO-M™ Version 1.0 item bank was developed using data collected from n=1036 people who use lower limb orthoses in a cross-sectional study between January 2021 and August 2021.

Sample characteristics are presented to facilitate interpretation of OPRO-M™ T-scores. The reference OPRO-M™ T-scores may serve as expected or typical values for lower limb orthosis users. Data used to develop scoring for OPRO-M™ instruments were collected in a cross-sectional study of orthosis users. Demographics and descriptive statistics are presented for the entire sample (n=1036), as well as subgroups by paresis type, sex, age, orthosis level, orthosis laterality, and number of comorbidities.

Data collection methods

Data were collected from lower limb orthosis users with a variety of different health conditions. Respondents in each of three subgroups (described under "target sample") were sought for participation in the study. Convenience sampling was supplemented with targeted recruitment to ensure minimum representation of specific device types, health conditions, and activity levels. Recruitment methods included emails or texts to patients who had previously received orthotic services, flyers displayed in orthotics clinics, advertisements in consumer magazines, and notices posted to a social media platform.

Target sample: Adult lower limb orthosis users with:

- health conditions that cause spastic paresis (e.g., stroke, spinal cord injury, multiple sclerosis, cerebral palsy)
- health conditions that cause flaccid paresis (e.g., post-polio syndrome, Charcot Marie Tooth disease, peripheral nerve injury)
- health conditions that affect the lower limbs but do not cause paresis (e.g., osteoarthritis, musculoskeletal injury, late effects of clubfoot)

Minimum recruitment targets were established to ensure representation of users with the following less common but clinically important characteristics:

- high mobility level (i.e., self-reported ability to jog or run)
- use at least one knee-ankle-foot orthosis (KAFO), hip-knee-ankle-foot orthosis (HKAFO), or functional electrical stimulation (FES) device
- less prevalent health conditions associated with use of a lower limb orthosis, including muscular dystrophy, cerebral palsy, and spina bifida

Inclusion criteria:
18 years of age and older
Ability to read English
Ability to transfer, stand, or walk without the help of another person
Prescribed an AFO, KAFO, HKAFO, or FES for one or both legs
At least six months of experience using an orthosis (or orthoses)

Exclusion criteria: Upper or lower limb amputation (not including fingers or toes)

Surveys were primarily administered by computer (i.e., online) but paper versions were also made available and mailed out upon request. Surveys included all of the questions in the OPRO-M™ item bank, as well as demographic questions, and additional questions about respondents' health, mobility, and orthosis use. All procedures were reviewed by a University of Washington IRB and determined to meet requirements for exempt status. Demographics (Table 1), health conditions (Table 2), comorbidities (Table 3), and other characteristics (Table 4) of the sample are presented below.

Table 1 – OPRO-M™ development sample - demographics

Characteristic	Spastic paresis n=303		Flaccid paresis n=515		No Paresis n=191		Unspecified paresis n=27		Total calibration sample n=1036	
	n	%	n	%	n	%	n	%	n	%
Sex										
Male	144	48%	268	52%	90	47%	12	46%	514	50%
Female	159	52%	247	48%	100	53%	14	54%	520	50%
Race/Ethnicity										
Non-Hispanic White	256	84%	457	89%	168	88%	23	85%	904	87%
Non-Hispanic Black	19	6%	17	3%	8	4%	2	7%	46	4%
Hispanic	11	4%	11	2%	8	4%	2	7%	32	3%
Other	14	5%	20	4%	5	3%	0	0%	39	4%
Not reported	3	1%	10	2%	2	1%	0	0%	15	1%
Education										
High school graduate or less	37	12%	58	11%	32	17%	4	15%	131	13%
Some college or tech school	99	33%	169	33%	55	29%	13	48%	336	32%
College graduate	103	34%	145	28%	48	25%	5	19%	301	29%
Advanced degree	64	21%	143	28%	56	29%	5	19%	268	26%
Employment										
Employed	90	30%	159	31%	66	35%	6	22%	321	31%
Homemaker	5	2%	12	2%	7	4%	3	11%	27	3%
Retired	84	28%	236	46%	72	38%	6	22%	398	39%
On disability	103	34%	87	17%	36	19%	11	41%	237	23%
Unemployed	8	3%	7	1%	5	3%	1	4%	21	2%
Student	10	3%	8	2%	3	2%	0	0%	21	2%

Table 2 – OPRO-M™ development sample – health conditions

Health condition that affects lower limb(s)	Total calibration sample n=1036	
	n	%
Unspecified peripheral neuropathy	94	9%
Lower limb injury	68	7%
Spinal cord injury	67	6%
Charcot Marie Tooth	60	6%
Stroke	53	5%
Multiple sclerosis	51	5%
Post-polio	51	5%
Other condition	335	32%
Multiple conditions	257	25%

Table 3 – OPRO-M™ development sample – comorbidities

Comorbidity	Spastic paresis n=303		Flaccid paresis n=515		No Paresis n=191		Unspecified paresis n=27		Total calibration sample n=1036	
	n	%	n	%	n	%	n	%	n	%
Asthma	47	16%	76	15%	32	17%	9	33%	164	16%
Arthritis	110	36%	245	48%	121	63%	18	67%	494	48%
Cancer	11	4%	43	8%	13	7%	2	7%	69	7%
Diabetes	45	15%	123	24%	36	19%	7	26%	211	20%
Digestive problems	34	11%	65	13%	29	15%	5	19%	133	13%
Heart trouble	42	14%	61	12%	30	16%	7	26%	140	14%
HIV or AIDS	3	1%	1	0%	1	1%	0	0%	5	0%
Kidney disease	9	3%	44	9%	17	9%	3	11%	73	7%
Liver problems	1	0%	11	2%	3	2%	1	4%	16	2%
Stroke	71	23%	6	1%	7	4%	2	7%	86	8%

Table 4 – OPRO-M™ development sample – other

Characteristic	Spastic paresis n=303		Flaccid paresis n=515		No Paresis n=191		Unspecified paresis n=27		Total calibration sample n=1036	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age at time of survey (years)	56.2	14.0	61.8	14.7	61.4	13.4	51.0	15.0	59.8	14.5
Typical hours per day using orthosis	9.3	4.7	10.0	4.4	9.4	4.5	8.3	4.8	9.7	4.5
Typical days per week using orthosis	5.9	1.7	6.1	1.5	5.9	1.6	6.0	1.6	6.0	1.6

OPRO-M™ Development Sample T-scores and Quartiles

OPRO-M™ Version 1.0 T-scores for development sample respondents are provided to facilitate interpretation of OPRO-M™ scores. Data are presented by clinical presentation, or paresis type, as indicated by reported health condition. While health conditions may present differently, the classification method presented in Table 5 was used to group participants by conditions that primarily affect upper motor neurons and present as spastic paresis; conditions that primarily affect lower motor neurons and present as flaccid paresis; and orthopedic conditions that do not affect neuromuscular function. Please note that the participants from the calibration sample with "unspecified paresis" (meaning that two or more primary health conditions were reported that typically present with different types of paresis) were not included in the tables below.

Table 5 – OPRO-M™ Version 1.0 development sample – health conditions under each paresis type

Spastic paresis n=303	Flaccid paresis n=515	No paresis n=191
• Stroke • Spinal cord injury • Multiple sclerosis • Traumatic brain injury • Cerebral palsy	• Post-polio syndrome • Charcot-Marie-Tooth disease • Muscular dystrophy • Degenerative neuromuscular condition (e.g., amyotrophic lateral sclerosis) • Spina bifida • Non-traumatic spinal condition • Traumatic peripheral nerve injury • Unspecified peripheral neuropathy	• Traumatic orthopedic limb injury • Non-traumatic orthopedic limb condition (e.g., osteoarthritis) • Congenital orthopedic limb condition • Hereditary musculoskeletal condition • Toe amputation

Mean, 25th percentile, 50th percentile (median), 75th percentile, standard deviation, and range of T-scores are provided for the total sample (Table 6), males (Table 7), females (Table 8), persons under 65 years of age (Table 9), persons 65 years of age or older (Table 10), unilateral AFO users (Table 11), bilateral AFO users (Table 12), unilateral or bilateral KAFO users (Table 13), and persons with three or more comorbidities (Table 14). The T-scores and quartiles provided in Tables 6-14 are based on sample responses to all 39 questions in the OPRO-M™ Version 1.0 item bank. Sample statistics are not listed when subgroups are smaller than 10 individuals.

Table 6 – OPRO-M™ Version 1.0 T-scores and quartiles – Total sample

OPRO-M™ T-score	Spastic paresis n=303	Flaccid paresis n=515	No paresis n=191	Total, including unspecified n=1036
Mean	47.8	49.8	54.4	50.0
25th Percentile	41.0	43.9	49.5	43.9
50th Percentile (median)	47.9	49.8	54.8	50.2
75th Percentile	54.8	56.6	59.9	56.9
Standard Deviation (SD)	10.1	9.7	8.9	9.9
Range (min – max)	17.5 - 75.3	17.5 - 81.7	24.0 - 76.9	17.5 - 81.7

Table 7 – OPRO-M™ Version 1.0 T-scores and quartiles – Males

OPRO-M™ T-score	Spastic paresis n=144	Flaccid paresis n=268	No paresis n=90	Total, including unspecified n=514
Mean	48.3	51.4	55.9	51.2
25th Percentile	41.1	45.5	51.4	44.9
50th Percentile (median)	47.9	51.4	55.8	51.7
75th Percentile	56.6	57.3	61.3	57.8
Standard Deviation (SD)	10.7	9.5	9.1	10.0
Range (min – max)	17.5 - 75.3	26.4 - 81.7	24.1 - 75.9	17.5 - 81.7

Table 8 – OPRO-M™ Version 1.0 T-scores and quartiles – Females

OPRO-M™ T-score	Spastic paresis n=159	Flaccid paresis n=247	No paresis n=100	Total, including unspecified n=520
Mean	47.3	48.1	43.0	48.7
25th Percentile	41.0	42.1	47.9	42.4
50th Percentile (median)	47.8	47.9	53.7	49.1
75th Percentile	53.9	55.1	59.0	55.4
Standard Deviation (SD)	9.6	9.7	8.5	9.7
Range (min – max)	17.5 - 73.4	17.5 - 73.0	33.2 - 76.9	17.5 - 76.9

Table 9 – OPRO-M™ Version 1.0 T-scores and quartiles – Ages 18-49

OPRO-M™ T-score	Spastic paresis n=89	Flaccid paresis n=104	No paresis n=36	Total, including unspecified n=241
Mean	48.5	52.3	57.1	51.4
25th Percentile	41.7	45.4	53.7	44.7
50th Percentile (median)	48.5	51.9	58	51.6
75th Percentile	57.2	60	61.9	59.1
Standard Deviation (SD)	10.9	10.6	7	10.5
Range (min – max)	17.5 - 75.3	17.5 - 81.7	39.1 - 70.4	17.5 - 81.7

Table 10 – OPRO-M™ Version 1.0 T-scores and quartiles – Ages 50-64

OPRO-M™ T-score	Spastic paresis n=127	Flaccid paresis n=156	No paresis n=70	Total, including unspecified n=363
Mean	47.7	48.1	53.5	49
25th Percentile	41.1	43.8	48.8	43.4
50th Percentile (median)	47.6	47.8	53.6	49.1
75th Percentile	54.6	54.5	58.4	55.2
Standard Deviation (SD)	9.3	8.8	9	9.2
Range (min – max)	17.5 - 65.8	20.3 - 70	33.3 - 76.9	17.5 - 76.9

Table 11 – OPRO-M™ Version 1.0 T-scores and quartiles – Ages 65 and older

OPRO-M™ T-score	Spastic paresis n=87	Flaccid paresis n=255	No paresis n=85	Total, including unspecified n=432
Mean	47.0	49.8	53.9	50.1
25th Percentile	40.0	43.4	49.5	43.4
50th Percentile (median)	45.9	50.2	54.7	50.5
75th Percentile	54.9	56.6	59.5	57.1
Standard Deviation (SD)	10.6	9.7	9.4	10.1
Range (min – max)	20.3 - 73.4	24.8 - 77.3	24.1 - 75.9	20.3 - 77.3

Table 12 – OPRO-M™ Version 1.0 T-scores and quartiles – Unilateral AFO users

OPRO-M™ T-score	Spastic paresis n=201	Flaccid paresis n=281	No paresis n=154	Total, including unspecified n=649
Mean	49.8	51.3	54.7	51.7
25th Percentile	44.2	44.8	49.8	45.2
50th Percentile (median)	49.8	51.2	55.0	51.9
75th Percentile	57.0	57.8	60.0	58.1
Standard Deviation (SD)	9.7	9.9	8.9	9.7
Range (min – max)	20.3 - 75.3	20.3 - 81.7	33.2 - 76.9	20.3 - 81.7

Table 13 – OPRO-M™ Version 1.0 T-scores and quartiles – Bilateral AFO users

OPRO-M™ T-score	Spastic paresis n=59	Flaccid paresis n=186	No paresis n=28	Total, including unspecified n=283
Mean	43.7	48.2	54.0	47.7
25th Percentile	37.2	43.2	49.4	41.7
50th Percentile (median)	44.7	48.4	55.2	48.2
75th Percentile	51.2	54.0	60.1	54.0
Standard Deviation (SD)	10.7	9.0	9.4	9.7
Range (min – max)	17.5 - 66.4	17.5 - 69.6	24.1 - 68.3	17.5 - 69.6

Table 14 – OPRO-M™ Version 1.0 T-scores and quartiles – Unilateral or bilateral KAFO users

OPRO-M™ T-score	Spastic paresis n=30	Flaccid paresis n=45	No paresis n=9	Total, including unspecified n=88
Mean	43.3	46.7	-	46.0
25th Percentile	38.0	40.9	-	40.1
50th Percentile (median)	42.3	47.4	-	47.3
75th Percentile	48.9	54.2	-	53.9
Standard Deviation (SD)	8.0	10.3	-	9.2
Range (min – max)	27.7 - 61.7	24.8 - 67.7	-	24.8 - 67.7

Table 15 – OPRO-M™ Version 1.0 T-scores and quartiles – No comorbidities

OPRO-M™ T-score	Spastic paresis n=107	Flaccid paresis n=162	No paresis n=40	Total, including unspecified n=313
Mean	49.1	51.7	56.6	51.4
25th Percentile	41.9	44.6	51.7	44.9
50th Percentile (median)	50.5	52.3	55.9	52.2
75th Percentile	57.4	58.5	60.2	58.3
Standard Deviation (SD)	11.0	10.6	9.1	10.8
Range (min – max)	17.5 - 75.3	17.5 - 81.7	39.1 - 76.9	17.5 - 81.7

Table 16 – OPRO-M™ Version 1.0 T-scores and quartiles – 1 comorbidity

OPRO-M™ T-score	Spastic paresis n=97	Flaccid paresis n=164	No paresis n=72	Total, including unspecified n=342
Mean	48.4	49.9	54.6	50.4
25th Percentile	42.7	44.3	49.8	44.6
50th Percentile (median)	47.9	50.3	55.5	50.5
75th Percentile	55.8	56.3	60.2	57.1
Standard Deviation (SD)	10.2	9.2	8.8	9.6
Range (min – max)	22.3 - 73.4	29.0 - 74.7	24.1 - 71.7	22.3 - 74.7

Table 17 – OPRO-M™ Version 1.0 T-scores and quartiles – 2 or more comorbidities

OPRO-M™ T-score	Spastic paresis n=99	Flaccid paresis n=189	No paresis n=79	Total, including unspecified n=381
Mean	45.6	48.2	53.0	48.5
25th Percentile	39.0	43.2	48.0	42.4
50th Percentile (median)	44.8	48.2	53.4	48.7
75th Percentile	51.8	53.9	58.4	54.7
Standard Deviation (SD)	8.8	9.1	8.8	9.3
Range (min – max)	20.3 - 68.5	23.3 - 77.3	33.2 - 72.1	20.3 - 77.3

Table 18 – OPRO-M™ Version 1.0 T-scores and quartiles – Never use assistive device(s)

OPRO-M™ T-score	Spastic paresis n=106	Flaccid paresis n=216	No paresis n=117	Total, including unspecified n=446
Mean	54.8	55.5	58.5	56.1
25th Percentile	49.2	50.3	53.8	51.0
50th Percentile (median)	55.2	55.4	57.6	56.1
75th Percentile	60.9	60.6	62.5	61.0
Standard Deviation (SD)	8.3	8.6	6.9	8.2
Range (min – max)	27.4 - 75.3	29.5 - 81.7	41.2 - 76.9	27.4 - 81.7

Table 19 – OPRO-M™ Version 1.0 T-scores and quartiles – Use assistive device(s) in community only

OPRO-M™ T-score	Spastic paresis n=15955	Flaccid paresis n=114	No paresis n=33	Total, including unspecified n=209
Mean	49.9	50.1	50.5	50.1
25th Percentile	45.9	46.1	45.0	46.1
50th Percentile (median)	49.9	50.0	50.9	50.1
75th Percentile	54.2	54.6	55.7	54.6
Standard Deviation (SD)	7.3	6.5	7.5	6.8
Range (min – max)	17.5 - 63.0	32.1 - 67.6	33.2 - 64.1	17.5 - 67.6

Table 20 – OPRO-M™ Version 1.0 T-scores and quartiles – Use assistive device(s) at home

OPRO-M™ T-score	Spastic paresis n=142	Flaccid paresis n=185	No paresis n=41	Total, including unspecified n=380
Mean	41.6	43.0	45.8	42.8
25th Percentile	37.0	37.5	40.6	37.6
50th Percentile (median)	41.1	43.2	46.9	42.7
75th Percentile	46.6	48.7	50.9	48.4
Standard Deviation (SD)	8.4	8.2	7.4	8.2
Range (min – max)	17.5 - 62.5	17.5 - 62.9	24.1 - 61.0	17.5 - 62.9

Acknowledgements

The OPRO-M™ developers wish to acknowledge the study participants who volunteered to provide the responses that were used to calibrate the instrument and establish reference values. We would also like to thank our clinical collaborators at Hanger Clinic and other private practices and organizations listed below that helped us to recruit research study participants:

- Ability Prosthetics & Orthotics
- Alabama Artificial Limb & Orthopedic Service
- American Prosthetics and Orthotics
- Capstone Orthotics and Prosthetics
- Cascade Prosthetics & Orthotics
- Cincinnati VA Medical Center
- Cornerstone Prosthetics & Orthotics
- Coyote Prosthetics & Orthotics
- Del Bianco Prosthetics & Orthotics
- Gillette Children's Specialty Healthcare
- Hanger Clinic
- Harborview Medical Center
- Independence Prosthetics and Orthotics
- Lawall Prosthetics & Orthotics
- Lyons Prosthetics & Orthotics, Inc.
- Medical Center Orthotics & Prosthetics
- Optimus Prosthetics
- Ortho Design
- Orthopedic Bracing Solutions Inc.
- Orthotic and Prosthetic Design
- Pacific Medical Prosthetics and Orthotics
- Phoenix Rising Prosthetic Orthotic Service
- Pinnacle Orthotics & Prosthetics
- Prosthetic Orthotic Group Los Angeles
- Rogue Prosthetics
- Southlake Prosthetics and Orthotics
- Southshore Prosthetics & Orthotics
- Surgi-Care, Inc.
- University of Virginia Prosthetics & Orthotics

We would also like to acknowledge the following developers for allowing us to include modified versions of their items in the OPRO-M™ item bank:

- Brian Hafner, PhD: *Prosthetic Limb Users Survey of Mobility*, developed under funding from the National Institute of Child Health and Human Development (R01HD065340, PI: Hafner), the Orthotics and Prosthetics Education and Research Foundation (OPERF-2014-SGA-1, PI: Hafner), and the Department of Defense (W81XWH-17-1-0551, PI: Hafner)
- Anita Myers, PhD: *Activities-specific Balance Confidence Scale*, developed under funding from the Royal Canadian Legion Fellowship in Gerontology
- Alan Jette, PT, PhD: *Activity Outcome Measurement for Post-acute Care*, developed under funding from the National Institute on Disability and Rehabilitation Research (H133B990005, PI: Jette), the National Institute of Child Health and Human Development (R01HD43568, PI: Haley) and the Agency for Healthcare Research and Quality
- Alan Jette, PT, PhD: *Late Life Function and Disability Instrument*, developed under funding from the National Institute on Aging (AG11669, PI: Jette)
- Allen Heinemann, PhD: *Orthotic and Prosthetic Users Survey*, developed under funding from the National Institute on Disability and Rehabilitation Research (H133E980023, PI: Childress)
- Erik Farin-Glattacker, PhD: *ICF-oriented patient questionnaire for the assessment of mobility, self-care, and domestic life*, developed under funding from the Central Associations of Statutory Health Insurers in Germany
- Elly Budiman-Mak, MD: *Functional Foot Index*, developed under funding from the Department of Veterans Affairs, Health Services Research and Development Section (IIR 84-083)

Questions about OPRO-M™ Instruments

If you have questions about OPRO-M™ instruments, please contact the University of Washington Center on Outcomes Research in Rehabilitation (UWCORR):

Mailing Address:

UWCORR
UW Department of Rehabilitation Medicine
Box 354237
Seattle, WA 98195

Phone and Email:

Phone: (206) 221-2414
Toll free: 1-800-504-0564
Fax: 206-685-9224
Email: info@opro-m.org

OPRO-M™ Change Log

Updates to OPRO-M™ Short Forms and/or the OPRO-M™ User Guide are made as changes are needed or as new evidence becomes available. Major updates (as indicated by a whole number change to the OPRO-M™ version [e.g., version 1 to 2]) include changes to item parameters that may affect use of OPRO-M™ instruments and/or interpretation of OPRO-M™ T-scores. Minor updates (as indicated by a decimal change to the OPRO-M™ version number [e.g., version 1.0 to 1.1]) include changes that do not affect item parameters (e.g., removal or modification of items), and are not expected to significantly affect use of the instrument or interpretation of T-scores. Details regarding changes made to the OPRO-M™ Short Forms and User Guide are provided below.

Date	Change Description
July 1, 2022	Release of the OPRO-M™ Version 1.0 Short Forms and User Guide
August 30, 2022	Update to reference tables
June 21, 2024	Update to new OPRO-M™ logo throughout. Addition of information about the computerized administration system (CAT) on pages 2, 5, and 14. Addition of a note about not including participant with “unspecified paresis” in tables on page 18.
September 24, 2025	Added missing normative data for participants with no comorbidities in Table 15.
November 21, 2025	Corrected sample sizes for groups and subgroups in Tables 6-20.