

Additional file 1: Table S1: Demographic Characteristics by Group

Characteristic	PF v1.0 General Population (including Centering)	PF v1.0 Cancer	PF v1.0 Heart	PF v1.0 Osteo-Arthritis	PF v1.0 Rheumatoid Arthritis	PF v1.0 Psychiatric Disorders	PF v 1.0 Spinal Cord Injury	PF v1.0 Limited Health	PF v2.0 General Population	PF v2.0 Poor Physical Health	Full-Bank Limited Upper Extremity Functioning	Full-Bank Non-Limited Upper Extremity Functioning	Combined Sample
Number of Participants	4,982	987	581	916	553	1,193	266	557	800	200	246	354	11,635
Age -- Mean (SD)	50.6 (18.3)	62.2 (12.1)	61.0 (11.8)	61.4 (12.6)	56.7 (11.0)	48.2 (14.9)	56.3 (11.9)	48.3 (13.7)	45.3 (16.6)	52.4 (15.3)	47.9 (13.7)	50.2 (14.9)	52.6 (16.6)
Gender -- Male -- N (%)	2,124 (42.6%)	633 (64.1%)	397 (68.3%)	330 (36.0%)	264 (47.7%)	582 (48.9%)	201 (75.6%)	207 (37.2%)	392 (49.0%)	70 (35.0%)	76 (30.9%)	134 (37.9%)	5,410 (46.5%)
Gender -- Female -- N (%)	2,858 (57.4%)	354 (35.9%)	184 (31.7%)	586 (64.0%)	289 (52.2%)	610 (51.1%)	65 (24.4%)	350 (62.8%)	408 (51.0%)	130 (65.0%)	170 (69.1%)	220 (62.2%)	6,224 (53.5%)
Race -- Caucasian -- N (%)	4,020 (80.7%)	927 (93.9%)	531 (91.4%)	851 (92.9%)	502 (90.8%)	998 (93.7%)	253 (95.1%)	530 (95.2%)	621 (77.6%)	172 (86.0%)	218 (88.6%)	308 (87.0%)	9,931 (85.4%)
Race -- African-American -- N (%)	638 (12.8%)	37 (3.8%)	22 (3.8%)	40 (4.4%)	22 (4.0%)	144 (12.1%)	6 (2.3%)	12 (2.2%)	106 (13.3%)	21 (10.5%)	15 (6.1%)	31 (8.8%)	1,094 (9.4%)
Race -- Asian-American -- N (%)	48 (1.0%)	5 (0.5%)	9 (1.6%)	4 (0.4%)	5 (0.9%)	10 (0.8%)	3 (1.1%)	5 (0.9%)	47 (5.9%)	3 (1.5%)	10 (4.1%)	18 (5.1%)	167 (1.4%)
Race -- Native American or Alaskan Native -- N (%)	168 (3.4%)	21 (2.1%)	14 (2.4%)	26 (2.8%)	12 (2.2%)	33 (2.8%)	16 (6.0%)	19 (3.4%)	**	**	4 (1.6%)	5 (1.4%)	318 (3.0%)
Race -- Native Hawaiian or Pacific Islander -- N (%)	17 (0.3%)	0 (0.0%)	1 (0.2%)	0 (0.0%)	2 (0.4%)	3 (0.3%)	0 (0.0%)	2 (0.4%)	**	**	0 (0.0%)	2 (0.6%)	27 (0.3%)
Race -- Other -- N (%)	**	**	**	**	**	**	**	**	38 (4.8%)	6 (3.0%)	4 (1.6%)	9 (2.5%)	57 (3.6%)
Ethnicity -- Hispanic -- N (%)	4,317 (86.7%)	957 (97.0%)	561 (96.6%)	885 (96.6%)	519 (93.9%)	1,100 (92.2%)	258 (97.0%)	541 (97.1%)	712 (89.0%)	184 (92.0%)	214 (87.0%)	324 (91.5%)	10,572 (91.1%)
Ethnicity -- Non-Hispanic -- N (%)	646 (13.0%)	29 (2.9%)	20 (3.4%)	26 (2.8%)	32 (5.8%)	88 (7.4%)	8 (3.0%)	16 (2.9%)	88 (11.0%)	16 (8.0%)	32 (13.0%)	30 (8.5%)	1,031 (8.9%)
Education -- Less than HS -- N (%)	172 (3.5%)	11 (1.1%)	14 (2.4%)	12 (1.3%)	11 (2.0%)	21 (1.8%)	5 (1.9%)	9 (1.6%)	89 (11.1%)	17 (8.5%)	6 (2.4%)	1 (0.3%)	368 (3.2%)
Edu -- HS or GED -- N (%)	1,033 (20.7%)	54 (5.5%)	64 (11.0%)	83 (9.1%)	52 (9.4%)	145 (9.1%)	31 (11.7%)	56 (10.1%)	231 (28.9%)	47 (23.5%)	53 (21.5%)	60 (17.0%)	1,909 (16.4%)
Edu -- Some College -- N (%)	2,085 (41.9%)	249 (25.2%)	208 (35.8%)	313 (34.2%)	198 (35.8%)	377 (31.6%)	95 (35.7%)	214 (38.4%)	184 (23.0%)	79 (39.5%)	81 (32.9%)	87 (24.6%)	4,170 (35.9%)
Edu -- Bachelors -- N (%)	1,006 (20.2%)	325 (32.9%)	159 (27.4%)	244 (26.6%)	161 (29.1%)	356 (29.8%)	70 (26.2%)	160 (28.7%)	208 (26.0%)	35 (17.5%)	80 (32.5%)	140 (39.6%)	2,944 (25.3%)
Edu -- Advanced Degree - N (%)	681 (13.7%)	348 (35.3%)	136 (23.4%)	264 (28.8%)	131 (23.7%)	293 (24.6%)	65 (24.4%)	118 (21.1%)	88 (11.0%)	22 (11.0%)	26 (10.6%)	66 (18.6%)	2,238 (19.2%)

** Not collected as part of this study

Additional file 1: Table S2: Population Distributions on the UE Item Bank

Group	Sample Size	Number of Items	T-Score Mean	T-Score SD
PF v1.0 Centering Sample (fixed)	2,172	43	50	10.0
PF v1.0 General Population	2,810	43	52	9.8
PF v1.0 Cancer	987	23	52	8.8
PF v1.0 Heart	581	4	46	10.1
PF v1.0 Osteoarthritis	916	14	42	6.0
PF v1.0 Rheumatoid Arthritis	553	17	45	8.7
PF v1.0 Psychiatric Disorders	1,193	14	47	7.0
PF v1.0 Spinal Cord Injury	266	5	40	6.5
PF v1.0 Limited Health	557	14	45	8.6
PF v2.0 General Population	800	19	46	12.3
PF v2.0 Poor Physical Function	200	19	36	6.0
Full-Bank Limited Upper Extremity Functioning	246	46	36	4.3
Full-Bank Non-Limited Upper Extremity Functioning	354	46	49	7.7

Upper Extremity – Short Form 7a

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

		Without any difficulty	With a little difficulty	With some difficulty	With much difficulty	Unable to do
PFA14r1	Are you able to carry a heavy object (over 10 pounds /5 kg)?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
PFA34	Are you able to wash your back?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
PFA36	Are you able to put on and take off a coat or jacket?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
PFB13	Are you able to carry a shopping bag or briefcase?.....	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
PFB28r1	Are you able to lift 10 pounds (5 kg) above your shoulder?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
PFB34	Are you able to change a light bulb overhead?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
PFM16	Are you able to pass a 20-pound (10 kg) turkey or ham to other people at the table?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

PROMIS Upper Extremity Short Form 7a

Sum Score Conversion Table

All questions must be answered in order to produce a valid score using the scoring tables. If a participant has skipped a question, use the HealthMeasures Scoring Service (https://www.assessmentcenter.net/ac_scoring-service) to generate a final score.

Raw Sum Score	T-Score	SD
7	16.3	3.0
8	19.3	2.7
9	21.1	2.5
10	22.6	2.4
11	23.9	2.4
12	25.0	2.3
13	26.1	2.3
14	27.0	2.3
15	27.9	2.3
16	28.8	2.3
17	29.7	2.3
18	30.5	2.3
19	31.4	2.3
20	32.2	2.3
21	33.0	2.3
22	33.9	2.3
23	34.7	2.4
24	35.6	2.4
25	36.6	2.5
26	37.5	2.6
27	38.6	2.6
28	39.7	2.8
29	40.9	2.9
30	42.3	3.1
31	43.9	3.4
32	45.6	3.6
33	47.7	3.9
34	50.9	4.5
35	58.2	6.7