

### Step 1: Scoring Responses to Completed Items

The score for an item is the IRT weight assigned to the selected response option. Item response-option weights for each of the eight RAND-36 HSI scales are provided by scale in Tables A.1–A.8. For example, the response-option weights for all of the items of the Physical Functioning Scale are provided in Table A.1.

- For each item, listed by number in the left column,
  - find the response option in column 2,
  - find the corresponding IRT weight for the response option in column 3,
  - record the IRT weight for that response on the Hand-Scoring Worksheet.
- If there is no response for *one* item on the scale, label that item “missing” on the Hand-Scoring Worksheet and continue.
- If there are *two or more* missing responses on a scale, a raw score cannot be calculated for that scale. Discontinue scoring the responses for that scale and proceed to the next scale.

### Step 2: Determining the Score of a Missing Response

- Estimate the IRT weight of a missing response:
  - Add the IRT weights of the responses to the completed items on the scale.
  - Divide the sum of the IRT weights by the number of *completed* items on that scale.
- Compare that result to the range of IRT weights for the item with the missing response (found in the far right column in Tables A.1–A.8):
  - If the result is within the range for the item, use the computed average weight.
  - If the result is below the range, use the low-end weight of the range.
  - If the result is above the range, use the high-end weight of the range.
- Add the estimated IRT weight for the missing response to the sum of IRT weights for the completed items.

**Table A.1. Item Response-Option Weights: Physical Functioning Scale (PF)**

Item	Response Option	IRT Weight	IRT-Weight Range
3	1	50	50-100
	2	76	
	3	100	
4	1	21	21-56
	2	38	
	3	56	
5	1	17	17-50
	2	33	
	3	50	
6	1	28	28-72
	2	50	
	3	72	
7	1	13	13-44
	2	28	
	3	44	
8	1	22	22-67
	2	44	
	3	67	
9	1	31	31-65
	2	47	
	3	65	
10	1	19	19-51
	2	36	
	3	51	
11	1	8	8-35
	2	21	
	3	35	
12	1	0	0-24
	2	13	
	3	24	

**Table A.2. Item Response-Option Weights: Role Limitations due to Physical Health Problems Scale (RLP)**

Item	Response Option	IRT Weight	IRT-Weight Range
13	1	0	0-44
	2	44	
14	1	56	56-100
	2	100	
15	1	30	30-74
	2	74	
16	1	26	26-70
	2	70	

**Table A.3. Item Response-  
Option Weights:  
Pain Scale (PA)**

Item	Response Option	IRT Weight	IRT-Weight Range
21	1	100	100-6
	2	78	
	3	51	
	4	34	
	5	15	
	6	6	
22	1	61	61-0
	2	49	
	3	32	
	4	14	
	5	0	

**Table A.4. Item Response-  
Option Weights:  
General Health  
Perceptions  
Scale (GHP)**

Item	Response Option	IRT Weight	IRT-Weight Range
1	1	100	100-0
	2	79	
	3	46	
	4	18	
	5	0	
33	1	10	10-66
	2	20	
	3	36	
	4	52	
	5	66	
34	1	89	89-21
	2	67	
	3	46	
	4	33	
	5	21	
35	1	10	10-84
	2	25	
	3	49	
	4	70	
	5	84	
36	1	95	95-26
	2	69	
	3	48	
	4	36	
	5	26	

**Table A.5. Item Response-Option Weights: Emotional Well-Being Scale (EWB)**

Item	Response Option	IRT Weight	IRT-Weight Range
24	1	8	8-60
	2	15	
	3	23	
	4	31	
	5	46	
	6	60	
25	1	5	5-46
	2	13	
	3	21	
	4	27	
	5	36	
	6	46	
26	1	100	100-5
	2	73	
	3	45	
	4	32	
	5	17	
	6	5	
28	1	4	4-64
	2	13	
	3	22	
	4	31	
	5	47	
	6	64	
30	1	91	91-0
	2	64	
	3	37	
	4	26	
	5	12	
	6	0	

**Table A.6. Item Response-Option Weights: Role Limitations due to Emotional Problems Scale (RLE)**

Item	Response Option	IRT Weight	IRT-Weight Range
17	1	0	0-41
	2	41	
18	1	59	59-100
	2	100	
19	1	13	13-54
	2	54	

**Table A.7. Item Response-  
Option Weights:  
Social Functioning  
Scale (SF)**

Item	Response Option	IRT Weight	IRT-Weight Range
20	1	88	88-0
	2	70	
	3	44	
	4	18	
	5	0	
32	1	27	27-100
	2	38	
	3	53	
	4	79	
	5	100	

**Table A.8. Item Response-  
Option Weights:  
Energy/Fatigue  
Scale (EF)**

Item	Response Option	IRT Weight	IRT-Weight Range
23	1	100	100-4
	2	76	
	3	47	
	4	31	
	5	16	
	6	4	
27	1	90	90-1
	2	70	
	3	45	
	4	30	
	5	13	
	6	1	
29	1	0	0-73
	2	10	
	3	22	
	4	35	
	5	56	
	6	73	
31	1	0	0-91
	2	11	
	3	25	
	4	40	
	5	71	
	6	91	