A SCORING AND INTERPRETATION PROGRAM FOR THE MMPI-2 FAKE BAD SCALE (FBS)

INSTRUCTIONS:

Enter the item responses below. Then go to the "Interpretation" worksheet for help in

Note: This scoring form will not work correctly if there are missing items.

If you already have the raw score, go directly to the Interpretation page and enter the

Total FBS Score

0

Item	Response (1 = TRUE, 2 = FALSE)
11	
12	
18	
28	
30	
31	
39	
40	
41	
44	
57	
58	
59	
81	
110	
111	
117	
152	

Revised April 15, 20

Note: This program is

The author assumes

or interpretation, and

The user is responsil

scored and interprete

Tolin, D.F. (2005). A S

Fake Bad Scale (FBS

164	
176	
224	
227	
248	
249	
250	
252	
255	
264	
274	
284	
325	
339	
362	
373	
374	
419	
433	
464	
469	
496	
505	
506	
561	

Original scale citation: Lees-Haley P.R., English L.T., & Glenn W.J. (1991). A Fake Bad Scale on the MMPI-2 for personal injury claimants. Psychological Reports, 68, 203-210.

Examinee's Name (Optional):

Scoring program developed by David Tolin, Ph.D.
Please send comments to dtolin@harthosp.org.

0

FBS Total Score 0

If you have calculated the total score from another program, you can enter it directly. Otherwise, this score is taken automatically from the Scoring page of this program.

Suggested Cutoff Scores

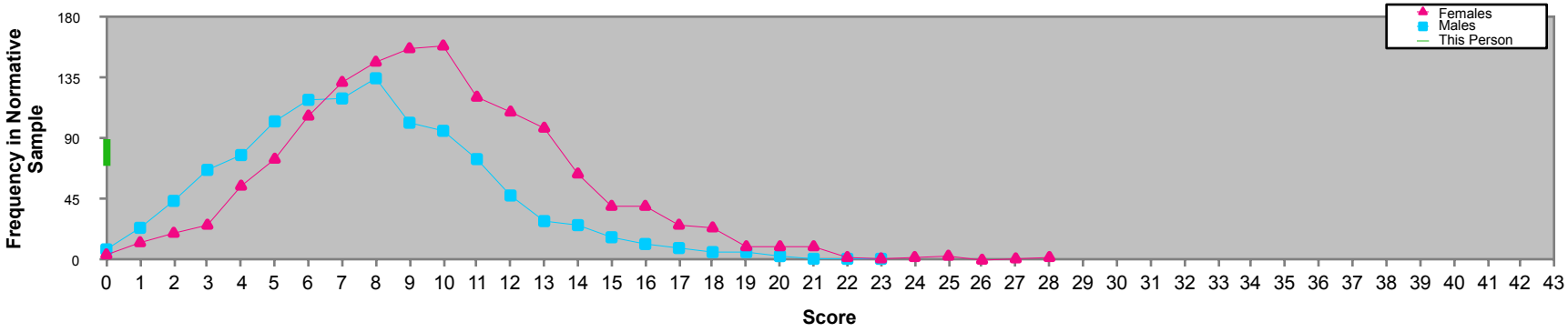
Suggested cutoff scores are 24 for males and 26 for females *(Source: Lees-Haley et al., Psychol Reports 1991;68:203-210)*
Suggested cutoff score for detecting probable TBI malingerers is 21 *(Source: Ross et al., J Clin Exper Neuropsychol 2004;26:115-124)*
Suggested cutoff score for detecting definite TBI malingerers is 21 *(Source: Larrabee, The Clin Neuropsychologist 2003;17:54-68)*
Suggested cutoff score for malingering mild TBI is 20 *(Source: Greiffenstein et al., J Clin Psychol 2002;58:1591-1600)*
Suggested cutoff score for malingering severe TBI is 24 *(Source: Greiffenstein et al., J Clin Psychol 2002;58:1591-1600)*
Suggested cutoff scores for detecting malingered PTSD are 23 for males and 25 for females *(Source: Lees-Haley, J Clin Psychol 1992;48:681-689)*
Suggested cutoff scores for detecting malingered PTSD are 21 for males and 26 for females *(Source: Greiffenstein et al., The Clin Neuropsychol 2004;18:573-590)*
Suggested cutoff score for detecting malingered neuropsychological impairment is 22 *(Source: Dearth et al., Arch Clin Neuropsychol 2005;20:95-110)*
Suggested cutof score for detecting malingered severe mental illness in male inmates is 24-26 *(Source: Iverson et al., Psychol Reports 2002; 90:131-136)*

Distance from MMPI-2 Normative Sample

Note: All standard deviation values are positive unless noted otherwise.

If this person is male, their score is -3.06 SD from the population mean and their T-score is 19 .
If this person is female, their score is -3.33 SD from the population mean and their T-score is 17 .
(Source: Greene, in Rogers, Clinical assessment of malingering and deception, New York: Guilford, 1997)
In the MMPI-2 normative sample, 100.0% of males and 100.0% of females received a score equal to or greater than 0 .
(Source: Greene, personal communication to D. Tolin, March 1, 2005)
FBS is normally distributed in the normative sample: Males skewness = 0.52, kurtosis = 0.56; Females skewness = 0.57, kurtosis = 0.96
(Source: Greene, personal communication to D. Tolin, March 1, 2005)
FBS is normally distributed in a sample of personal injury claimants: Males skewness = .015, kurtosis = -.496, Females skewness = .087, kurtosis = .024
(Source: Lees-Haley, personal communication to D. Tolin, March 20, 2005)
FBS is normally distributed in a sample of severe TBI patients: Skewness = 0.52, kurtosis = -0.32 *(Source: Ross, personal communication to D. Tolin, April 15, 2005)*

MMPI-2 Normative Sample (N = 2600)
(Source: Greene, Personal Communication to D. Tolin, March 1, 2005)



Distance from Other Populations

This score is	-3.16	SD from the mean of a sample of 258 worker's compensation applicants.			
This score is	-3.33	SD from the mean of a sample of 88 psychiatric patients.			
This score is	-2.60	SD from the mean of a sample of 45 people on criminal probation.			
This score is	-4.21	SD from the mean of a sample of 132 job applicants.			
		(Source: Fox, personal communication to D. Tolin, March 2, 2005)			
This score is	-3.47	SD from the mean of a sample of 100 patients with reported cognitive impairment who were not involved in litigation.			
This score is	-3.58	SD from the mean of a sample of 100 patients with reported cognitive impairment who were involved in litigation.			
		(Source: Meyers et al., Arch Clin Neuropsychol 2002; 17:157-169)			
This score is	-4.60	SD from the mean of female custody litigants and	-4.60	SD from the mean of male custody litigants (no alleged child abuse).	
This score is	-4.19	SD from the mean of female custody litigants and	-4.39	SD from the mean of male custody litigants (alleged physical abuse).	
This score is	-4.57	SD from the mean of female custody litigants and	-4.35	SD from the mean of male custody litigants (alleged sexual abuse).	
This score is	-3.23	SD from the mean of female personal injury litigants and	-3.23	SD from the mean of male personal injury litigants.	
		(Source: Posthuma & Harper, Prof Psychol: Res & Pract 1998;29:437-443)			
		(Note: Gender-specific N's not reported. Custody litigants/no abuse N = 80; custody litigants/alleged abuse N = 108; personal injury N = 95)			
This score is	-3.10	SD from the mean of 492 personal injury litigants claiming impairment from physical or psychological trauma.			
		(Source: Lees-Haley, J Clin Psychol 1997; 53:745-755)			
This score is	-3.31	SD from the mean of a sample of 120 psychiatric clinic patients who were involved in litigation.			
This score is	-3.00	SD from the mean of a sample of 208 psychiatric clinic patients who were not involved in litigation.			
This score is	-3.44	SD from the mean of a sample of 43 control participants with no history of psychological disorder.			
		(Source: Tsushima & Tsushima, Assessment 2001; 8:205-212)			
This score is	-2.01	SD from the mean of a sample of 20 male medical patients being assessed for organ transplant.			
This score is	-2.44	SD from the mean of a sample of 25 male veterans in substance abuse treatment.			
		(Source: Iverson et al., Psychol Reports 2002; 90:131-136)			

Distance from Probable Malingering and Non-Malingering Groups

This score is	-5.87	SD from the mean of a sample of 25 personal injury litigants judged to be malingering *(based on FBS ≥ 20).*
This score is	-3.83	SD from the mean of a sample of 20 personal injury litigants judged to be credible *(based on FBS < 20).*
This score is	-3.88	SD from the mean of a sample of 16 medical outpatients instructed to simulate emotional distress from a motor vehicle accident.
This score is	-2.19	SD from the mean of a sample of 15 medical outpatients instructed to simulate emotional distress from toxic exposure.
This score is	-3.38	SD from the mean of a sample of 36 medical outpatients instructed to simulate emotional distress from job stress.
This score is	-2.94	SD from the total mean of 67 medical outpatients instructed to simulate emotional distress.
		(Source: Lees-Haley et al., Psychol Reports 1991;68:203-210)

This score is	-3.14	SD from the mean of a sample of 59 TBI patients who are not seeking compensation.		
This score is	-5.59	SD from the mean of a sample of 59 patients seeking compensation for mild TBI who scored poorly on a malingering test.		
		(Source: Ross et al., J Clin Exper Neuropsychol 2004;26:115-124)		
This score is	-8.36	SD from the mean of males with probable PTSD and	-9.16	SD from the mean of 33 females with probable PTSD.
This score is	-4.72	SD from the mean of 26 males who appear to malinger PTSD and	-8.57	SD from the mean of 31 females who appear to malinger PTSD.
		(Source: Greiffenstein et al., The Clin Neuropsychol 2004;18:573-590)		
This score is	-3.43	SD from the mean of a sample of 64 personal injury litigants claiming non-PTSD psychological distress.		
This score is	-5.23	SD from the mean of a sample of 55 personal injury litigants appearing to malinger PTSD (e.g., trauma clearly did not meet DSM IIIR criterion A).		
		(Source: Lees-Haley, J Clin Psychol 1992;48:681-689)		
This score is	-5.61	SD from the mean of a a sample of 33 people claiming neuropsychological impairment who scored poorly on a malingering test.		
		(Source: Larrabee, Arch Clin Neuropsychol 2003;18:673-686)		
This score is	-5.12	SD from the mean of a sample of 24 definite neuropsychological malingerers.		
This score is	-4.69	SD from the mean of a sample of 17 definite neuropsychological malingerers.		
This score is	-3.16	SD from the mean of a sample of 54 patients with moderate/severe TBI, psychiatric disorder, or mixed neurologic diagnoses.		
		(Source: Larrabee, The Clin Neuropsychol 2003;17:410-425;		
		additional data from this study found in Larrabee, Forensic Neuropsychology: A Scientific Approach, New York: Oxford, 2005 p. 128)		
This score is	-3.40	SD from the mean of a sample of 23 TBI patients instructed to malinger TBI.		
This score is	-2.27	SD from the mean of a sample of 23 TBI patients instructed to respond honestly.		
This score is	-3.70	SD from the mean of a sample of 23 healthy volunteers instructed to malinger TBI.		
This score is	-2.96	SD from the mean of a sample of 23 healthy volunteers instructed to respond honestly.		
		(Source: Dearth et al., Arch Clin Neuropsychol 2005;20:95-110)		
This score is	-4.83	SD from the mean of a sample of 26 people claiming neuropsychological impairment who scored poorly on a malingering test.		
This score is	-2.60	SD from the mean of a sample of 29 known TBI patients.		
		(Source: Larrabee, The Clin Neuropsychol 2003;17:54-68)		
This score is	-2.39	SD from the mean of a sample of 25 male minimum security prison inmates.		
This score is	-3.72	SD from the mean of a sample of 25 male minimum security prison inmates instructed to malinger severe psychiatric problems.		
		(Source: Iverson et al., Psychol Reports 2002; 90:131-136)		
This score is	-3.80	SD from the mean of a sample of 42 patients with chronic psychiatric problems instructed to respond normally.		
This score is	-4.35	SD from the same sample of 42 psychiatric patients instructed to malinger severe psychiatric problems.		
		(Source: Rogers et al., Assessment 1995; 2:81-89)		
This score is	-3.42	SD from the mean of a sample of 61 patients with PTSD (validity of diagnosis not checked).		

This score is	-4.98	SD from the mean of a sample of 35 college students instructed to malinger PTSD who were not coached.
This score is	-5.43	SD from the mean of a sample of 29 college students instructed to malinger PTSD who were coached about PTSD symptoms.
This score is	-5.15	SD from the mean of a sample of 30 college students instructed to malinger PTSD who were coached about MMPI-2 validity scales.
This score is	-3.20	SD from the mean of a sample of 37 college students instructed to malinger PTSD who were coached about PTSD and validity scales.

(Source: Bury & Bagby, Psychol Assess 2002; 14:472-484)

This score is	-3.99	SD from the mean of a sample of 159 mild TBI plaintiffs with illogical symptom histories.
This score is	-2.73	SD from the mean of a sample of 68 patients with documented moderate to severe TBI.

(Source: Greiffenstein et al., J Clin Psychol 2002; 58:1591-1600)

This score is	-4.00	SD from the mean of a sample of 48 patients with major depressive disorder.
This score is	-6.45	SD from the mean of a sample of 23 mental health professionals instructed to malinger major depressive disorder.
This score is	-2.80	SD from the mean of a sample of 50 psychiatric patients with conditions other than major depressive disorder.

(Source: Bagby et al., Assessment 2000; 7:55-62)

This score is	-5.64	SD from the mean of a sample of 85 undergraduates instructed to malinger PTSD.
This score is	-4.90	SD from the mean of a sample of 64 outpatients with PTSD secondary to child sexual abuse.

(Source: Elhai et al., Assessment 2001; 8: 221-236)

Detection of Malingering vs. True Illness

Sensitivity and Specificity

In a comparison of mild TBI patients and patients seeking compensation for mild TBI who scored poorly on a malingering test,

100.0% of probable malingerers obtained a score greater than or equal to 0 , and 0.0% of TBI patients scored below 0 .

(Source: Ross et al., J Clin Exper Neuropsychol 2004;26:115-124)

In a comparison of closed head injury patients and definite neuropsychological malingerers,

100.0% of definite malingerers obtained a score greater than or equal to 0 , and 0.0% of TBI patients scored below 0 .

(Source: Larrabee, The Clin Neuropsychol 2003;17:54-68)

Positive and Negative Predictive Power

These analyses vary according to the presumed base rate of malingering in the population. The interpretations here allow for the assumption of either a 25% or 50% base rate of malingering.

In a comparison of 48 probable PTSD cases and 57 probable PTSD malingerers,

Assuming a 50% base rate of malingering:

a score of	0	or higher meant that the person had a	Below range*	chance of being in the malingering group (females).
a score of	0	or higher meant that the person had a	Below range*	chance of being in the malingering group (males).
a score of	0	or lower meant that the person had a	Below range*	chance of being in the PTSD group (females).
a score of	0	or lower meant that the person had a	Below range*	chance of being in the PTSD group (males).

Assuming a 25% base rate of malingering:

a score of	0	or higher meant that the person had a	Below range*	chance of being in the malingering group (females).
a score of	0	or higher meant that the person had a	Below range*	chance of being in the malingering group (males).
a score of	0	or lower meant that the person had a	Below range*	chance of being in the PTSD group (females).

a score of 0 or lower meant that the person had a Below range* chance of being in the PTSD group (males).

(Source: Greiffenstein et al., The Clin Neuropsychol 2004;18:573-590)

***Notes: "Below range" means that this person scored lower than did anyone in the study sample. A 0% probability of being in the malingering group might be inferred.**

"Above range" means that this person scored higher than did anyone in the study sample. A 100% probability of being in the malingering group might be inferred.

Program author: David F. Tolin, Ph.D.

References

Bagby, R. M., Nicholson, R. A., Buis, T., & Bacchiochi, J. R. (2000). Can the MMPI-2 validity scales detect depress

Bury, A. S., & Bagby, R. M. (2002). The detection of feigned uncoached and coached posttraumatic stress disorde *Psychological Assessment, 14*, 472-484.

Dearth, C. S., Berry, D. T., Vickery, C. D., Vagnini, V. L., Baser, R. E., Orey, S. A., & Cragar, D. E. (2005). Detectio patients and community controls. *Archives of Clinical Neuropsychology, 20*, 95-110.

Elhai, J. D., Gold, S. N., Sellers, A. H., & Dorfman, W. I. (2001). The detection of malingered posttraumatic stress

Greene, R. L. (1997). Assessment of malingering and defensiveness on multiscale inventories. In Rogers, R. (ed.) 169-207). New York: Guilford Press.

Greiffenstein, M.F., Baker, W.J., Axelrod, B., Peck, T.A., & Gervais, R. (2004). The Fake Bad Scale and MMPI-2 F *Clinical Neuropsychologist, 18*, 573-590.

Greiffenstein, M. F., Baker, W. J., Gola, T., Donders, J. & Miller, L. J. (2002). The FBS in atypical and severe close

Iverson, G. L., Henrichs, T. F., Barton, E. A., & Allen, S. (2002). Specificity of the MMPI-2 Fake Bad Scale as a ma 131-136.

Larrabee, G. J. (2003). Detection of symptom exaggeration with the MMPI-2 in litigants with malingered neurocogn

Larrabee, G. J. (2003). Exaggerated MMPI-2 Symptom Report in Personal Injury Litigants with Malingered Neuroc

Larrabee, G. J. (2003). Detection of malingering using atypical performance patterns on standard neuropsycholog

Lees-Haley P. R. (1992). Efficacy of MMPI-2 validity scales and MCMI-II modifier scales for detecting spurious PT subscales, DIS, and DEB. *Journal of Clinical Psychology, 48,* 681-689.

Lees-Haley P. R. (1997). MMPI-2 base rates for 492 personal injury plaintiffs: Implications and challenges for forer

Lees-Haley P. R., English L.T., & Glenn W.J. (1991). A Fake Bad Scale on the MMPI-2 for personal injury claiman

Meyers, J. E., Millis, S. R., & Volkert, K. (2002). A validity index for the MMPI-2. *Archives of Clinical Neuropsychol*

Posthuma, A. B. & Harper, J. F. (1998). Comparison of MMPI-2 responses of child custody and personal injury litig

Rogers, R., Sewell, K.W., & Ustad, K.L. (1995). Feigning among chronic outpatients on the MMPI-2: A systematic

Ross, S. R., Millis, S. R., Krukowski, R. A., Putnam, S. H., and Adams, K. M. (2004). Detecting incomplete effort o injury. *Journal of Clinical and Experimental Neuropsychology, 26*, 115-124.

Tsushima, W.T. & Tsushima, V.G. (2001). Comparison of the Fake Bad Scale and other MMPI-2 validity scales wit

Answer Key to the FBS:

Following are the MMPI-2 items and scored direction of answering for the Fake Bad Scale (FBS):

Add one point if marked True: 11, 18, 28, 30, 31, 39, 40, 44, 59, 111, 252, 274, 325, 339,

Add one point if marked False: 12, 41, 57, 58, 81, 110, 117, 152, 164, 176, 224, 227, 24

Ross et al.				Greiffenstein et al.							
Score	Sensitivity	Specificity			PPP Females						
0	1	0		Base rate	0	1	2	3	4	5	6
1	1	0		0.5	Below rang	Below rang	Below rang	Below rang	Below range	Below range	Below rang
2	1	0		0.25	Below rang	Below rang	Below rang	Below rang	Below range	Below range	Below rang
3	1	0			PPP Males						
4	1	0		Base rate	0	1	2	3	4	5	6
5	1	0		0.5	Below rang	Below rang	Below rang	Below rang	Below range	Below range	Below rang
6	1	0		0.25	Below rang	Below rang	Below rang	Below rang	Below range	Below range	Below rang
7	1	0			NPP Females						
8	1	0.034		Base rate	0	1	2	3	4	5	6
9	1	0.051		0.5	Below rang	Below rang	Below rang	Below rang	Below range	Below range	Below rang
10	1	0.102		0.25	Below rang	Below rang	Below rang	Below rang	Below range	Below range	Below rang
11	1	0.254			NPP Males						
12	1	0.322		Base rate	0	1	2	3	4	5	6
13	1	0.356		0.5	Below rang	Below rang	Below rang	Below rang	Below range	Below range	Below rang
14	1	0.475		0.25	Below rang	Below rang	Below rang	Below rang	Below range	Below range	Below rang
15	1	0.559									
16	1	0.593									
17	1	0.61		Greene: Frequencies in the MMPI2 Normative Sample							
18	1	0.746			Males	Females	Cum_male	Cum_fem	Pct_male	Pct_fem	Inv_pct_ma
19	0.983	0.797		0	0	0	0	0	0.00%	0.00%	100.00%
20	0.949	0.547		1	0	0	0	0	0.00%	0.00%	100.00%
21	0.898	0.898		2	0	0	0	0	0.00%	0.00%	100.00%
22	0.881	0.915		3	8	3	8	3	0.70%	0.21%	99.30%
23	0.881	0.9449		4	8	4	16	7	1.41%	0.48%	98.59%
24	0.847	0.949		5	24	13	40	20	3.51%	1.37%	96.49%
25	0.814	0.949		6	44	20	84	40	7.38%	2.74%	92.62%
26	0.712	0.983		7	67	26	151	66	13.27%	4.51%	86.73%
27	0.661	1		8	78	55	229	121	20.12%	8.28%	79.88%
28	0.593	1		9	103	75	332	196	29.17%	13.41%	70.83%
29	0.508	1		10	119	107	451	303	39.63%	20.73%	60.37%
30	0.424	1		11	120	132	571	435	50.18%	29.75%	49.82%
31	0.407	1		12	135	147	706	582	62.04%	39.81%	37.96%

32	0.322	1		13	102	157	808	739	71.00%	50.55%	29.00%
33	0.203	1		14	96	159	904	898	79.44%	61.42%	20.56%
34	0.169	1		15	75	121	979	1019	86.03%	69.70%	13.97%
35	0.153	1		16	48	110	1027	1129	90.25%	77.22%	9.75%
36	0.102	1		17	29	98	1056	1227	92.79%	83.93%	7.21%
37	0.068	1		18	26	64	1082	1291	95.08%	88.30%	4.92%
38	0.034	1		19	17	40	1099	1331	96.57%	91.04%	3.43%
39	0.064	1		20	12	40	1111	1371	97.63%	93.78%	2.37%
40	0	1		21	9	26	1120	1397	98.42%	95.55%	1.58%
41	0	1		22	6	24	1126	1421	98.95%	97.20%	1.05%
42	0	1		23	6	10	1132	1431	99.47%	97.88%	0.53%
43	0	1		24	3	10	1135	1441	99.74%	98.56%	0.26%
				25	1	10	1136	1451	99.82%	99.25%	0.18%
Larrabee et al.				26	1	2	1137	1453	99.91%	99.38%	0.09%
Score	Sensitivity	Specificity		27	1	1	1138	1454	100.00%	99.45%	0.00%
0	1	0		28		2	1138	1456	100.00%	99.59%	0.00%
1	1	0		29		3	1138	1459	100.00%	99.79%	0.00%
2	1	0		30		0	1138	1459	100.00%	99.79%	0.00%
3	1	0		31		1	1138	1460	100.00%	99.86%	0.00%
4	1	0		32		2	1138	1462	100.00%	100.00%	0.00%
5	1	0.034		33							0.00%
6	1	0.034		34							0.00%
7	1	0.034		35							0.00%
8	1	0.138		36							0.00%
9	1	0.138		37							0.00%
10	1	0.172		38							0.00%
11	1	0.207		39							0.00%
12	1	0.207		40							0.00%
13	1	0.276		41							0.00%
14	1	0.31		42							0.00%
15	1	0.448		43							0.00%
16	1	0.517		This Person							
17	0.962	0.552		0	80						
18	0.923	0.552									

19	0.923	0.69									
20	0.923	0.793									
21	0.808	0.862									
22	0.808	0.862									
23	0.692	0.862									
24	0.615	0.862									
25	0.615	0.931									
26	0.538	0.966									
27	0.5	0.966									
28	0.5	0.966									
29	0.423	0.966									
30	0.385	0.966									
31	0.308	1									
32	0.192	1									
33	0.115	1									
34	0.115	1									
35	0.038	1									
36	0	1									
37	0	1									
38	0	1									
39	0	1									
40	0	1									
41	0	1									
42	0	1									
43	0	1									

7	8	9	10	11	12	13	14	15	16	17	18
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Inv_pct_fem											
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98.63%											
97.26%											
95.49%											
91.72%											
86.59%											
79.27%											
70.25%											
60.19%											

49.45%											
38.58%											
30.30%											
22.78%											
16.07%											
11.70%											
8.96%											
6.22%											
4.45%											
2.80%											
2.12%											
1.44%											
0.75%											
0.62%											
0.55%											
0.41%											
0.21%											
0.21%											
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0.00%											

19	20	21	22	23	24	25	26	27	28	29	30
Below rang	Below rang	Below rang	Below rang	Below rang	Below rang	Below rang	0.87	0.87	0.87	0.92	0.95
Below rang	Below rang	Below rang	Below rang	Below rang	Below rang	Below rang	0.69	0.69	0.68	0.71	0.86
19	20	21	22	23	24	25	26	27	28	29	30
Below rang	Below rang	0.67	0.67	0.67	0.67	0.67	0.67	0.65	0.78	0.87	1
Below rang	Below rang	0.42	0.42	0.42	0.42	0.42	0.42	0.38	0.54	0.69	1
19	20	21	22	23	24	25	26	27	28	29	30
Below rang	Below rang	Below rang	Below rang	Below rang	Below rang	Below rang	0.82	0.78	0.72	0.64	0.61
Below rang	Below rang	Below rang	Below rang	Below rang	Below rang	Below rang	0.93	0.89	0.89	0.87	0.82
19	20	21	22	23	24	25	26	27	28	29	30
Below rang	Below rang	0.83	0.83	0.83	0.83	0.83	0.65	0.66	0.63	0.63	0.59
Below rang	Below rang	0.94	0.94	0.94	0.94	0.94	0.85	0.84	0.84	0.84	0.81

31	32	33	34	35	36	37	38	39	40	41	42
1	1	1	1	1	1	1	1	1	1	Above rang	Above rang
1	1	1	1	1	1	1	1	1	1	Above rang	Above rang
31	32	33	34	35	36	37	38	39	40	41	42
Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang
Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang
31	32	33	34	35	36	37	38	39	40	41	42
0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	Above rang	Above rang
0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	Above rang	Above rang
31	32	33	34	35	36	37	38	39	40	41	42
Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang
Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang	Above rang

43
Above rang
Above rang
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Above rang
Above rang
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Above rang
Above rang
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Above rang
Above rang