BTrackS™
Balance and Fall Risk Normative Data

Since 2014, BTrackS Balance Plates have been installed in over a thousand locations around the United States and we have collected over 20,000 BTrackS Balance Tests from those plates. The BTrackS Balance Test (BBT) is the Balance and Fall Risk Assessment protocol that is provided with BTrackS Assess Balance Software. All of the BBT data is de-identified for anonymity. Using these results, Balance Tracking Systems has created a normative database for ages 50+ which is represented by the two tables on the right. There is a table for males and a table for females and the data is broken down by age (horizontal) and percentile ranking (vertical). When an individual completes a BBT, it's compared with other BBTs in that age group to obtain a percentile ranking. As an example, a 77-year-old male who gets a BBT of 61 is in the 25th percentile for their age and this is circled in the male table.

BTrackS Fall Risk Assessment (FRA) categorizes an individual's fall risk as either Low, Moderate or High. Fall Risk is a condition that is typically associated with individuals aged 65+ but we have included data for individuals aged 50+. The assessment is determined by comparing the individual's BBT to the average BBT of an adult aged 20-39. Adults 20-39 are not considered fall-risk candidates and after testing thousands of individuals in this age range – it is possible to calculate a statistical average – which is 22cm for women and 24cm for men.

A Fall Risk Assessment of LOW is provided when the BBT is lower than 1 standard deviation above the average. These BBT's are represented in **GREEN** in the tables. A Fall Risk Assessment of MODERATE is provided when the BBT is between 1 and 2 standard deviations above the average. These BBT's are represented in **YELLOW** in the tables. A Fall Risk Assessment of HIGH is provided when the BBT is greater than 2 standard deviations above the average and is colored **RED** in the tables. These assessments are in line with population statistics documenting approximately 25% of individuals aged 65 have high fall risk and approximately 50% of individuals aged 80 and above have high fall risk.

A version of this normative data has been published in the Physical Therapy Journal (PTJ), the flagship journal for the American Physical Therapy Association. The Citation is: 1: Goble DJ, Baweja HS. Normative Data for the BTrackS Balance Test of Postural Sway: Results from 16,357 Community-Dwelling Individuals Who Were 5 to 100 Years Old. Phys Ther. 2018 Sep 1;98(9):779-785.

Fall Risk Assessment Tables

MALE

%ile	50-59	60-64	65-69	70-74	75-79	80+
100%	10	12	10	5	13	16
95%	17	19	19	18	20	22
90%	18	22	21	21	22	25
85%	20	24	23	23	26	27
80%	21	25	24	26	27	30
75%	22	25	26	28	29	33
70%	23	27	27	30	31	35
65%	24	29	29	31	33	38
60%	25	29	30	33	35	40
55%	26	30	33	34	37	44
50%	28	31	34	37	39	46
45%	29	33	35	40	41	50
40%	30	34	37	44	43	54
35%	32	37	40	46	48	59
30%	33	38	43	48	53	65
25%	36	41	45	50	61	72
20%	38	43	49	55	67	79
15%	41	49	56	67	76	88
10%	51	54	65	75	83	97
5%	64	68	81	100	101	108
0%	186	317	249	210	146	233

FEMALE

%ile	50-59	60-64	65-69	70-74	75-79	80+
100%	8	9	9	9	13	10
95%	15	15	16	15	17	17
90%	16	17	18	18	20	20
85%	17	19	19	19	22	22
80%	19	20	20	21	24	24
75%	20	21	21	22	25	26
70%	21	22	23	24	27	29
65%	22	23	24	25	28	31
60%	23	24	25	26	29	32
55%	24	25	27	27	31	34
50%	25	27	28	29	32	37
45%	27	28	29	30	34	39
40%	28	29	31	32	37	42
35%	29	30	32	34	39	45
30%	30	32	35	36	42	49
25%	32	34	37	39	45	53
20%	33	36	40	42	49	58
15%	36	39	43	47	55	65
10%	40	43	48	54	61	75
5%	46	49	62	68	77	100
0%	118	120	170	165	581	212

BBT Normative Data for all Age Groups

The two tables below illustrate the percentile ranking for BBT results for all age groups. The top chart is for males and the bottom chart is for females. While the green, yellow and red designations are applied to these charts for ages 5 to 49 – they don't represent fall risk as applied to the senior population – they represent measurements that compare testing results to an average healthy adult aged 20-39.

> **Generally, for individuals aged 5 to 49, it's desirable to have BBT results in the top 75% and not in the bottom 25%.**

MALE

%ile	5-6	7-8	9-10	11-13	14-16	17-19	20-29	30-39	40-49	50-59	60-64	65-69	70-74	75-79	80+
100%	19	20	15	11	10	10	8	9	11	10	12	10	5	13	16
95%	27	22	22	17	15	14	14	13	14	17	19	19	18	20	22
90%	29	27	24	19	17	16	16	15	16	18	22	21	21	22	25
85%	31	29	26	20	18	17	17	16	17	20	24	23	23	26	27
80%	35	30	27	22	19	18	18	17	18	21	25	24	26	27	30
75%	36	31	28	23	20	19	19	18	20	22	25	26	28	29	33
70%	37	32	30	24	21	19	19	19	21	23	27	27	30	31	35
65%	40	33	31	26	22	20	20	21	22	24	29	29	31	33	38
60%	41	37	31	27	23	21	21	21	23	25	29	30	33	35	40
55%	43	38	33	28	24	22	22	23	24	26	30	33	34	37	44
50%	44	39	34	29	24	22	23	23	25	28	31	34	37	39	46
45%	45	40	35	30	25	23	24	24	26	29	33	35	40	41	50
40%	46	42	36	31	27	24	25	25	27	30	34	37	44	43	54
35%	48	44	37	33	27	25	26	26	28	32	37	40	46	48	59
30%	52	46	40	34	29	26	27	27	30	33	38	43	48	53	65
25%	53	49	42	35	30	28	28	29	31	36	41	45	50	61	72
20%	53	52	45	37	32	29	29	30	32	38	43	49	55	67	79
15%	64	55	48	40	34	31	31	32	34	41	49	56	67	76	88
10%	70	62	52	43	36	33	33	34	40	51	54	65	75	83	97
5%	75	69	60	49	41	37	38	37	47	64	68	81	100	101	108
0%	99	105	117	77	99	76	94	112	113	186	317	249	210	146	233

FEMALE

%ile	5-6	7-8	9-10	11-13	14-16	17-19	20-29	30-39	40-49	50-59	60-64	65-69	70-74	75-79	80+
100%	15	20	14	12	9	8	8	10	8	8	9	9	9	13	10
95%	21	22	21	16	14	13	13	13	13	15	15	16	15	17	17
90%	24	24	23	19	15	15	14	14	15	16	17	18	18	20	20
85%	26	28	24	21	16	16	16	15	16	17	19	19	19	22	22
80%	28	28	25	22	17	17	17	16	17	19	20	20	21	24	24
75%	31	29	26	23	18	17	17	17	18	20	21	21	22	25	26
70%	32	31	27	24	19	18	18	18	19	21	22	23	24	27	29
65%	37	32	29	25	20	19	19	19	20	22	23	24	25	28	31
60%	37	33	30	27	21	20	20	20	21	23	24	25	26	29	32
55%	41	34	31	28	21	20	20	20	22	24	25	27	27	31	34
50%	42	36	32	29	22	21	21	21	23	25	27	28	29	32	37
45%	44	37	33	30	23	22	22	21	23	27	28	29	30	34	39
40%	46	38	35	31	24	23	22	22	24	28	29	31	32	37	42
35%	48	38	37	33	25	24	23	23	26	29	30	32	34	39	45
30%	49	41	38	34	26	25	24	24	27	30	32	35	36	42	49
25%	51	42	40	36	27	25	25	26	28	32	34	37	39	45	53
20%	55	43	42	38	29	26	27	27	29	33	36	40	42	49	58
15%	59	46	44	40	31	28	28	29	31	36	39	43	47	55	65
10%	64	53	47	43	33	30	30	31	34	40	43	48	54	61	75
5%	69	60	53	48	37	33	35	36	42	46	49	62	68	77	100
0%	79	119	80	151	72	50	74	59	122	118	120	170	165	581	212

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