

# FRA Balance Test 1 Fall Risk Assessment

ID  
**0002**  
(박혜은)

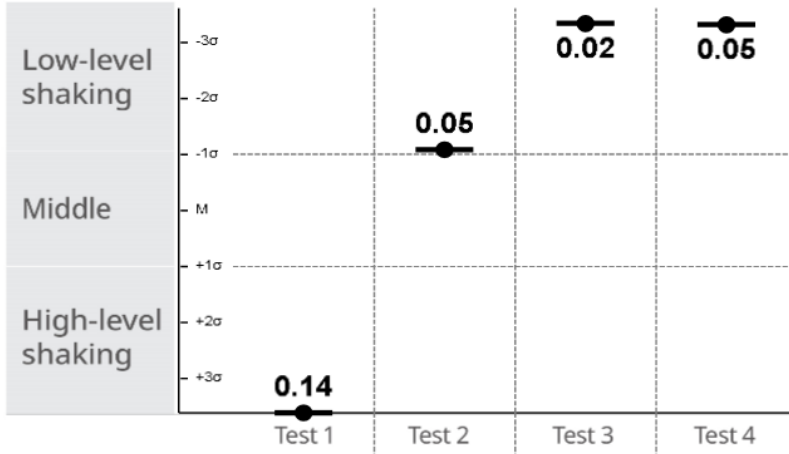
Height  
**5ft. 05.4in.**

Age  
**43**

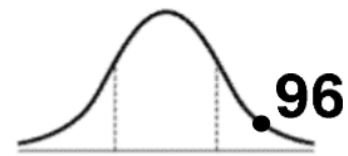
Gender  
**Female**

Test Date  
**08.26.2020. 14:23**

## Sensory system analysis



## Sensory system score



### Sensory system evaluation

Low  Middle  High

### Somatic senses evaluation

Low  Middle  High

### Visual senses evaluation

Low  Middle  High

### Vestibular senses evaluation

Low  Middle  High

## Research parameters

	Standard Deviation of center	Shaking Standard Deviation	Mean center of mass calculated by the coordinates of weight value	Minimum and Maximum values of X-axis	Minimum and Maximum values of Y-axis	Distance travelled in 1 second/ Standard deviation of mean distance per 10 seconds	Ratio of weight distribution in the quadrants
Test1. Standing on balance with eyes opened <b>Basic balance</b>	px	F/B(px)	X	Min	Min	10s 3689.48 / 31.1	Quadrant 1 45.87
	46.86	41.72	-1.87	-192.08	-195.40	20s 1205.43 / 8.8	Quadrant 2 23.55
	cm	L/R(px)	Y	Max	Max	30s 873.59 / 4.8	Quadrant 3 11.57
	1.24	24.00	5.31	38.35	300.00		Quadrant 4 19.01
Test2. Standing on balance with eyes closed <b>Use somatic senses</b>	px	F/B(px)	X	Min	Min	10s 1453.30 / 11.4	Quadrant 1 26.38
	19.02	10.94	-2.33	-172.87	-18.97	20s 970.45 / 4.4	Quadrant 2 48.2
	cm	L/R(px)	Y	Max	Max	30s 713.22 / 2.8	Quadrant 3 14.24
	0.50	17.04	8.90	28.91	78.37		Quadrant 4 11.18
Test3. Standing on balance on top of mat <b>Use visual senses</b>	px	F/B(px)	X	Min	Min	10s 406.64 / 1.9	Quadrant 1 17.8
	3.92	4.02	-0.28	-6.20	-17.53	20s 431.43 / 2.4	Quadrant 2 41.8
	cm	L/R(px)	Y	Max	Max	30s 364.96 / 2.5	Quadrant 3 17.5
	0.10	1.68	1.13	7.77	15.80		Quadrant 4 22.9
Test4. Standing on balance with eyes closed on top of mat <b>Use vestibular senses</b>	px	F/B(px)	X	Min	Min	10s 1040.63 / 4.9	Quadrant 1 10.99
	11.25	11.33	1.04	-42.22	-43.41	20s 922.50 / 4.3	Quadrant 2 17.4
	cm	L/R(px)	Y	Max	Max	30s 1174.15 / 3.5	Quadrant 3 19.96
	0.30	5.27	-10.46	22.61	23.64		Quadrant 4 51.65

# FRA Balance Test 2 Fall Risk Assessment

ID  
**0002**  
(박혜은)

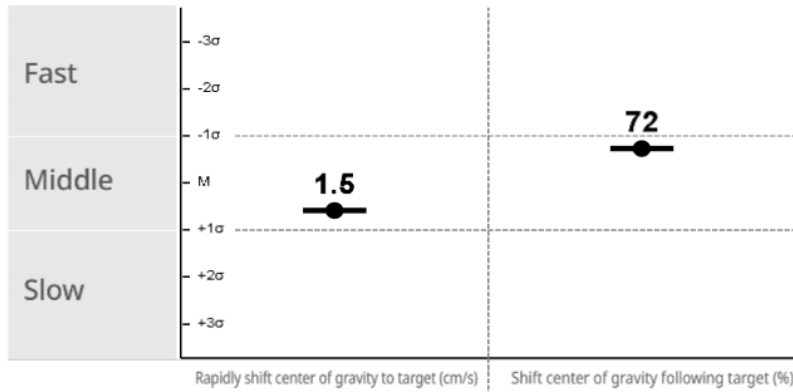
Height  
**5ft. 05.4in.**

Age  
**43**

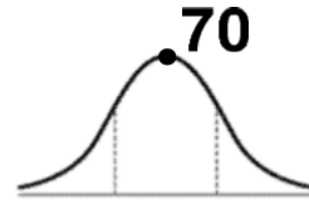
Gender  
**Female**

Test Date  
**08.26.2020. 14:23**

## Comprehensive balance analysis



## Comprehensive balance score



### Comprehensive balance evaluation

Low  Middle  High

### Rapidly shift center of gravity to target evaluation

Slow  Middle  Fast

### Shift center of gravity following target evaluation

Low  Middle  High

## Research parameters

### Rapidly shift center of gravity to target

Time taken to hit the target with the red ball for the first time

The sequence of moving targets	0 - 5	5 - 0	0 - 1	1 - 0	0 - 3	3 - 0	0 - 7	7 - 0	0 - 8	8 - 0	0 - 6	6 - 0	0 - 2	2 - 0	0 - 4
Time(sec)	2.08	1.34	3.19	1.10	2.04	1.16	2.02	1.53	3.56	1.52	2.01	1.58	3.68	1.90	1.20

### Total distance the red ball traveled to hit the target

The sequence of moving targets	0 - 5	5 - 0	0 - 1	1 - 0	0 - 3	3 - 0	0 - 7	7 - 0	0 - 8	8 - 0	0 - 6	6 - 0	0 - 2	2 - 0	0 - 4
Time(sec)	2.02	2.02	2.00	2.02	2.00	2.00	2.02	-	2.63	3.14	2.00	2.00	2.00	2.00	2.00

### Total distance the red ball traveled to hit the target

The sequence of moving targets	0 - 5	5 - 0	0 - 1	1 - 0	0 - 3	3 - 0	0 - 7	7 - 0	0 - 8	8 - 0	0 - 6	6 - 0	0 - 2	2 - 0	0 - 4
Distance	449.29	306.59	600.63	239.64	259.11	175.96	308.79	230.86	1157.78	359.30	424.50	281.61	539.98	310.87	217.16

### Shift center of gravity following target

#### Accuracy for the diagonal section 1

Speed	1a	2b	3c	4d	2e	1f	3g	2h	3i
Arrival rate	9	100	100	100	54	17	100	98	89

#### Accuracy for the diagonal section 2

Speed	1a	2b	3c	4d	2e	1f	3g	2h	3i
Arrival rate	99	100	60	97	100	59	94	65	25

# FRA Research parameters 2 Fall Risk Assessment

ID **0002**  
(박혜은)      Height **5ft. 05.4in.**      Age **43**      Gender **Female**      Test Date **08.26.2020. 14:23**

## Comprehensive balance analysis

### Shift center of gravity following target

#### Accuracy for the diagonal section 1

Speed	1a	2b	3c	4d	2e	1f	3g	2h	3i
Arrival rate	9	100	100	100	54	17	100	98	89

#### Accuracy for the diagonal section 2

Speed	1a	2b	3c	4d	2e	1f	3g	2h	3i
Arrival rate	99	100	60	97	100	59	94	65	25

## Nervous system analysis

### Rapidly move feet

#### Response time

Steps	1	2	3	4	Average
Time(sec)	2.09	0.96	0.82	0.97	0.90

#### After the initial signal, the time taken to sustain 90% or more load for 3 seconds

Steps	1	2	3	4	Average
Time(sec)	5.12	3.98	3.83	3.99	4.23

## Musculoskeletal system analysis

Lean mass (Current weight Reference, %)		Front/Back lean mass rate (Flexor/Extensor) (Standard range 0.5-0.7)		Relative muscular strength			
Left leg	Right leg	Left leg	Right leg	Left leg strength (Extensor)/Weight	Left leg strength (Flexor)/Weight	Right leg strength (Extensor)/Weight	Right leg strength (Flexor)/Weight
7.5	8.8	2.55	4.69	0.1	0.26	0.07	0.32

# FRA Research parameters 1 Fall Risk Assessment

ID  
**0002**  
(박혜은)

Height  
**5ft. 05.4in.**

Age  
**43**

Gender  
**Female**

Test Date  
**08.26.2020. 14:23**

## Sensory system analysis

	Standard Deviation of center	Shaking Standard Deviation	Mean center of mass calculated by the coordinates of weight value	Minimum and Maximum values of X-axis	Minimum and Maximum values of Y-axis	Distance travelled in 1 second/ Standard deviation of mean distance per 10 seconds	Ratio of weight distribution in the quadrants
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Test2. Standing on balance with eyes closed <b>Use somatic senses</b>	px	F/B(px)	X	Min	Min	10s 1453.30 / 11.4	Quadrant 1 26.38
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	3.92	4.02	-0.28	-6.20	-17.53	20s 431.43 / 2.4	Quadrant 2 41.8
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	cm	L/R(px)	Y	Max	Max	30s 1174.15 / 3.5	Quadrant 3 19.96
	0.30	5.27	-10.46	22.61	23.64		Quadrant 4 51.65

## Comprehensive balance analysis

### Rapidly shift center of gravity to target

Time taken to hit the target with the red ball for the first time

The sequence of moving targets	0 - 5	5 - 0	0 - 1	1 - 0	0 - 3	3 - 0	0 - 7	7 - 0	0 - 8	8 - 0	0 - 6	6 - 0	0 - 2	2 - 0	0 - 4
Time(sec)	2.08	1.34	3.19	1.10	2.04	1.16	2.02	1.53	3.56	1.52	2.01	1.58	3.68	1.90	1.20

Total time taken to maintain the red ball within the target for 2 seconds

The sequence of moving targets	0 - 5	5 - 0	0 - 1	1 - 0	0 - 3	3 - 0	0 - 7	7 - 0	0 - 8	8 - 0	0 - 6	6 - 0	0 - 2	2 - 0	0 - 4
Time(sec)	2.02	2.02	2.00	2.02	2.00	2.00	2.02	-	2.63	3.14	2.00	2.00	2.00	2.00	2.00

Total distance the red ball traveled to hit the target

The sequence of moving targets	0 - 5	5 - 0	0 - 1	1 - 0	0 - 3	3 - 0	0 - 7	7 - 0	0 - 8	8 - 0	0 - 6	6 - 0	0 - 2	2 - 0	0 - 4
Distance	449.29	306.59	600.63	239.64	259.11	175.96	308.79	230.86	1157.78	359.30	424.50	281.61	539.98	310.87	217.16

# FRA Balance Test 2 Fall Risk Assessment

ID  
**0002**  
(박혜은)

Height  
**5ft. 05.4in.**

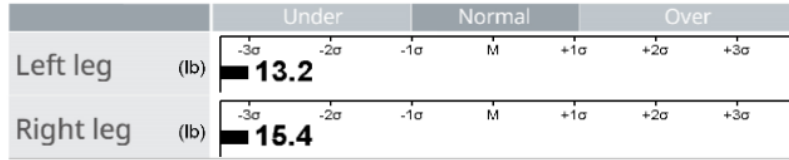
Age  
**43**

Gender  
**Female**

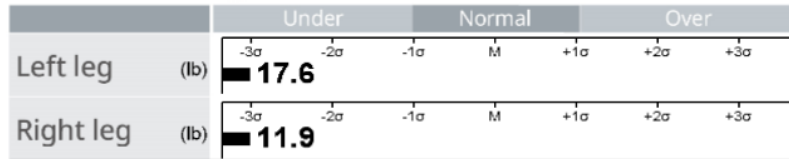
Test Date  
**08.26.2020. 14:23**

## Musculoskeletal system analysis

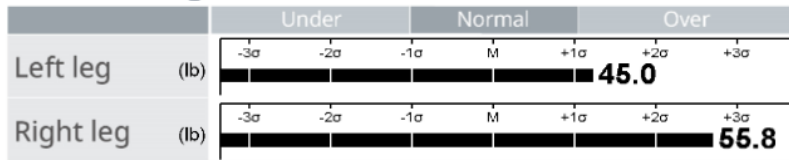
### Leg lean mass



### Extensor strength

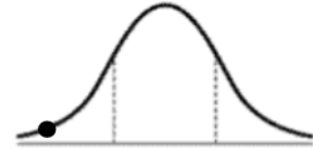


### Flexor strength



## Musculoskeletal system score

**37**



### Musculoskeletal system evaluation

Low  Middle  High

### Leg lean mass evaluation

Under  Middle  Over

### Evaluation of bilateral symmetry between Left and Right Leg Lean Mass

Symmetrical  Slightly asymmetrical  Severely Asymmetrical

### Leg muscle strength evaluation

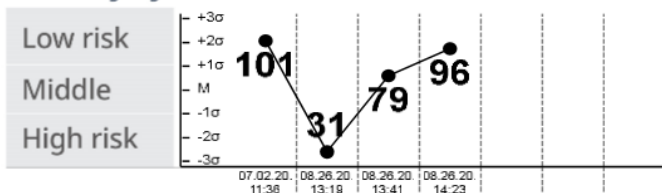
Low  Middle  High

### Evaluation of bilateral symmetry between Left and Right Leg Strength

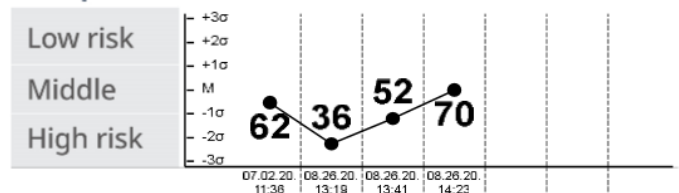
Symmetrical  Slightly asymmetrical  Severely Asymmetrical

## Total analysis

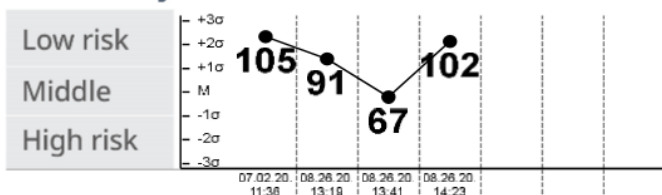
### Sensory system



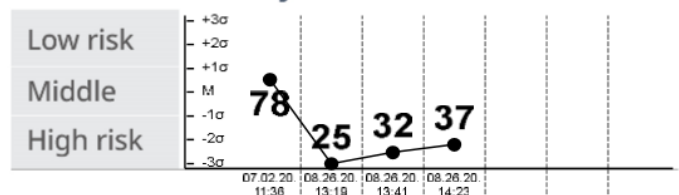
### Comprehensive balance



### Nervous system



### Musculoskeletal system



## Total analysis

### Fall risk analysis

High risk  Normal  Low risk

# FRA Balance Test 4 Fall Risk Assessment

ID  
**0002**  
(박혜은)

Height  
**5ft. 05.4in.**

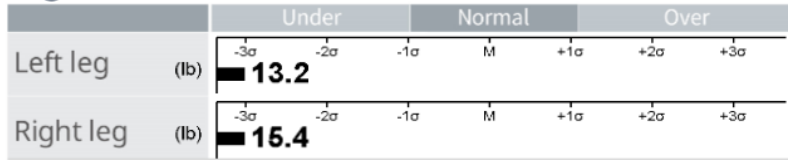
Age  
**43**

Gender  
**Female**

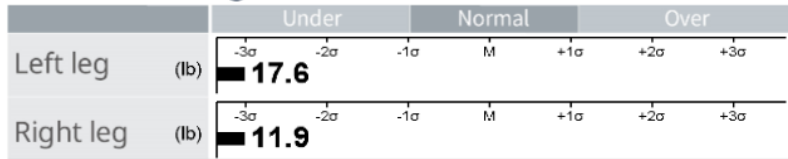
Test Date  
**08.26.2020. 14:23**

## Musculoskeletal system analysis

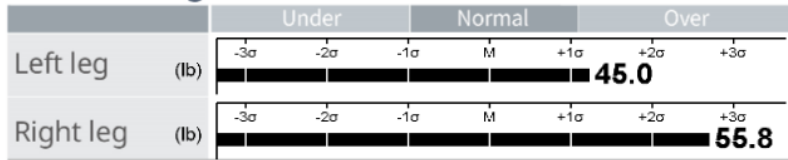
### Leg lean mass



### Extensor strength

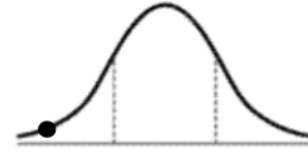


### Flexor strength



## Musculoskeletal system score

**37**



### Musculoskeletal system evaluation

Low  Middle  High

### Leg lean mass evaluation

Under  Middle  Over

### Evaluation of bilateral symmetry between Left and Right Leg Lean Mass

Symmetrical  Slightly asymmetrical  Severely Asymmetrical

### Leg muscle strength evaluation

Low  Middle  High

### Evaluation of bilateral symmetry between Left and Right Leg Strength

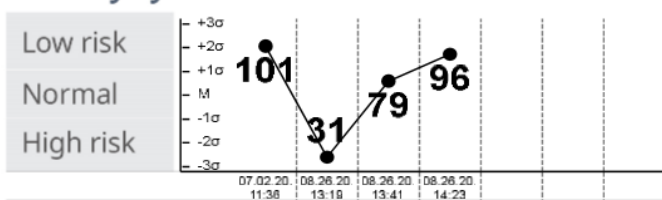
Symmetrical  Slightly asymmetrical  Severely Asymmetrical

## Research parameters

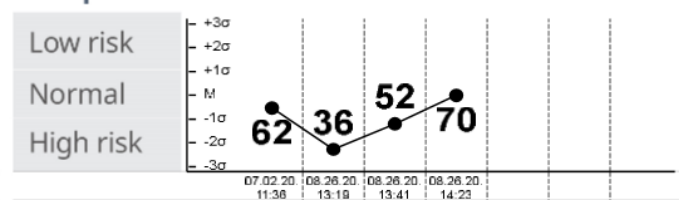
Lean mass (Current weight Reference, %)		Front/Back lean mass rate (Flexor/Extensor) (Standard range 0.5-0.7)		Relative muscular strength			
Left leg	Right leg	Left leg	Right leg	Left leg strength (Extensor)/Weight	Left leg strength (Flexor)/Weight	Right leg strength (Extensor)/Weight	Right leg strength (Flexor)/Weight
7.5	8.8	2.55	4.69	0.1	0.26	0.07	0.32

Total analysis | Fall risk analysis  High risk  Middle  Low risk

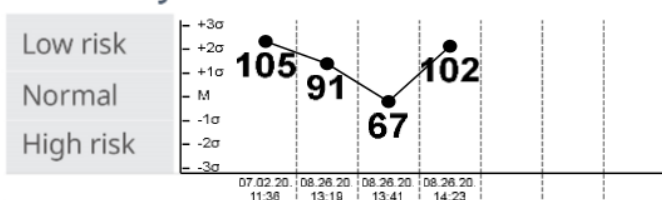
### Sensory system



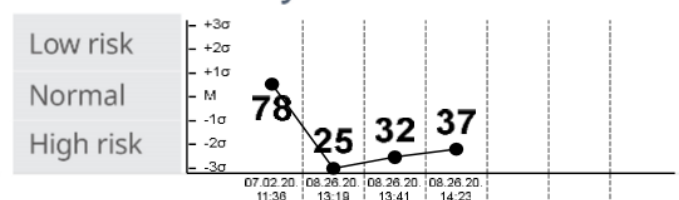
### Comprehensive balance



### Nervous system



### Musculoskeletal system



# FRA Balance Test 1 Fall Risk Assessment

ID  
**0002**  
(박혜은)

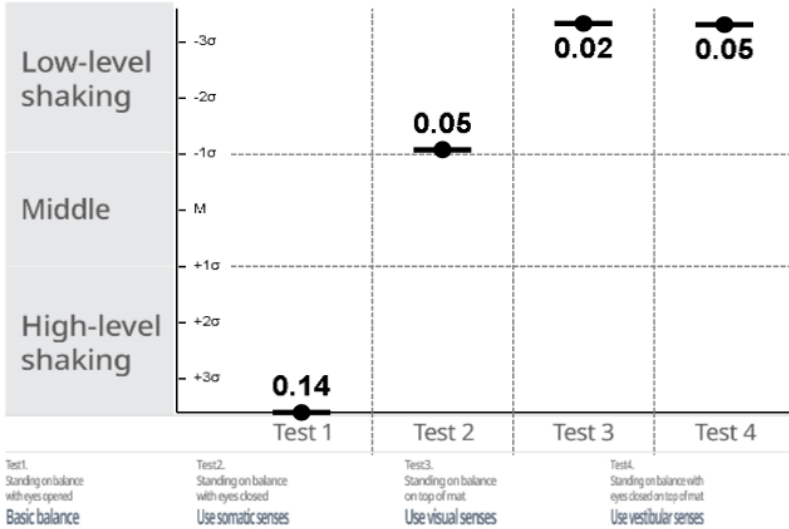
Height  
**5ft. 05.4in.**

Age  
**43**

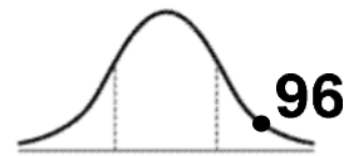
Gender  
**Female**

Test Date  
**08.26.2020. 14:23**

## Sensory system analysis

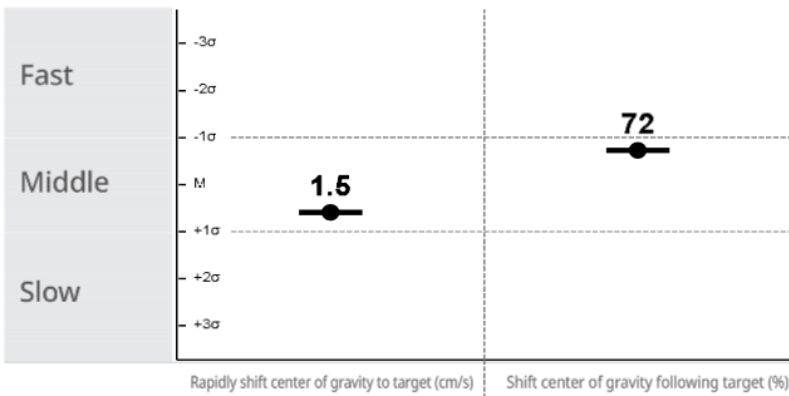


## Sensory system score

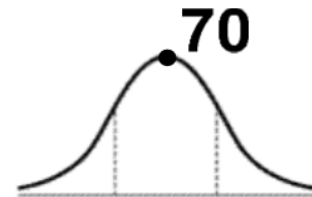


- Sensory system evaluation**  
 Low     Middle     High
- Somatic senses evaluation**  
 Low     Middle     High
- Visual senses evaluation**  
 Low     Middle     High
- Vestibular senses evaluation**  
 Low     Middle     High

## Comprehensive balance analysis

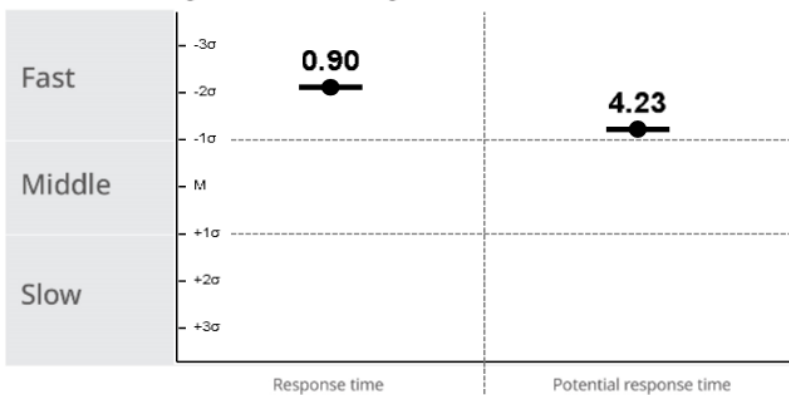


## Comprehensive balance score

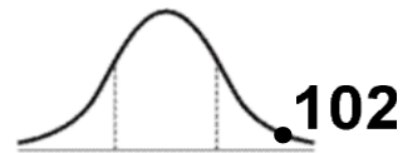


- Comprehensive balance evaluation**  
 Low     Middle     High
- Rapidly shift center of gravity to target evaluation**  
 Slow     Middle     Fast
- Shift center of gravity following target evaluation**  
 Low     Middle     High

## Nervous system analysis



## Nervous system score



- Nervous system evaluation**  
 Low     Middle     High
- Response time evaluation**  
 Slow     Middle     Fast
- Potential response time evaluation**  
 Slow     Middle     Fast

# FRA Balance Test 3 Fall Risk Assessment

ID  
**0002**  
(박혜은)

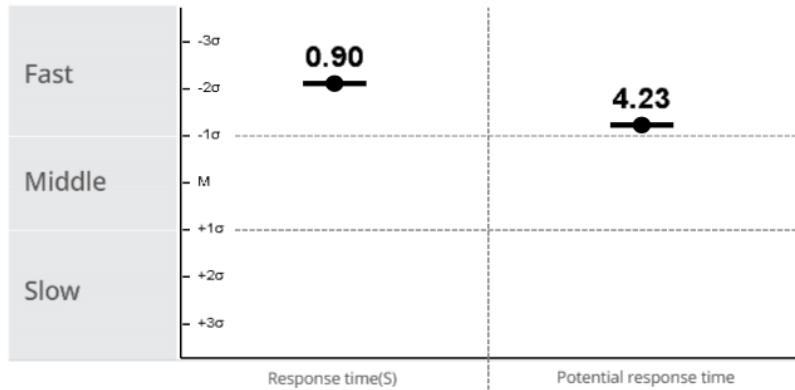
Height  
**5ft. 05.4in.**

Age  
**43**

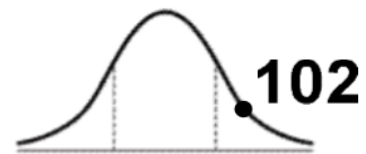
Gender  
**Female**

Test Date  
**08.26.2020. 14:23**

## Nervous system analysis



## Nervous system score



### Nervous system evaluation

Low  Middle  High

### Response time evaluation

Slow  Middle  Fast

### Potential response time evaluation

Slow  Middle  Fast

## Research parameters

### Rapidly move feet

#### Response time

Steps	1	2	3	4	Average
Time(sec)	2.09	0.96	0.82	0.97	0.90

#### After the initial signal, the time taken to sustain 90% or more load for 3 seconds

Steps	1	2	3	4	Average
Time(sec)	5.12	3.98	3.83	3.99	4.23