# Clinical Report - Total Balance Pro

| | | | | | |
|---|---|---|---|---|---|
| **Name** | John Stuart | **Age** | 59 | **Device** | PhysioSensing |
| **Gender** | Male | **Date** | 06/02/2021 19:00:18 | **Clinic** | |
| **Height** | 1.68 m | **ID** | T04_10 | **Health** | CT |
| **Weight** | 72.0 kg | | | **professional** | |
| **Diagnosis** | | | | | |
| **Exercise** | Analyses the balance integration through six categories - proprioception, vestibular/visual input, postural stability, lower limb strength, reflexes/response time and motor control. | | | | |

## Summary results
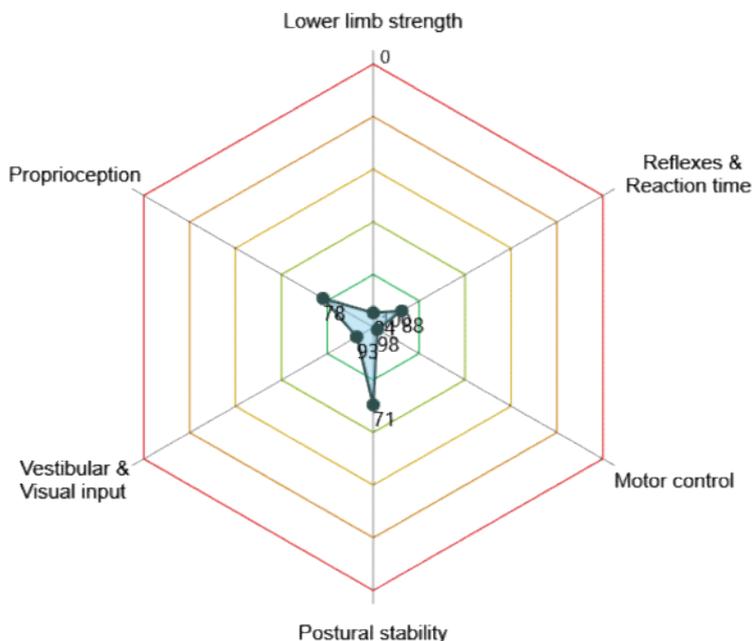


Note: This graph displays the categories that need intervention. The value of each category correspond to the weighted average of results in relation to their normative values. A value of 100% indicates that all results in this category are within the normative values. See in Detailed Results the parameters used for each category.

| | Description | Clinical Considerations |
|---|---|---|
| **Proprioception** | Provide information to the brain for spatial orientation of the body and movements of body segments relative to each other from muscle spindles, tendon organs, joints and skin receptors. | Habituation exercises through static and dynamic activities on different surfaces, such as BAPS board training; stretching techniques for enhancing range of motion. Screening for peripheral neuropathy. |
| **Vestibular & Visual input** | Postural orientation and equilibrium from sensorimotor integration in static activities | Recognize the vestibular and visual contribution on balance. Refer to vestibular specialist for further investigation. |
| **Postural stability** | Indicates the ability and the effort to maintain balance analyzing sway parameters and asymmetries. | Acquire appropriate postural strategies, such as ankle and hip strategies. Train with balance control exercises and weight bearing (antigravity) postures. |
| **Lower limb strength** | Muscle strength of lower extremities during dynamic tasks | Empowerment of trunk and lower limbs. Use ankle weights and elastic resistance bands for functional training. Also focus on knee-flexor and extensor and plantar-flexor muscle train. |
| **Reflexes & Reaction time** | Spinal reflexes and voluntary response to specific stimuli | Adaptation exercises to train balance reactions such as stop and go, and changes of direction exercises. Also practice dynamic stepping routines and weight shifting exercises under sound and visual signals. |
| **Motor control** | Motor output ability during static and dynamic postural conditions | Practice weight shifting exercises with biofeedback for dynamic balance control and limits of stability training. Also train Tai-chi with slow rhythmic movements. |

## 1. Firm surface eyes opened
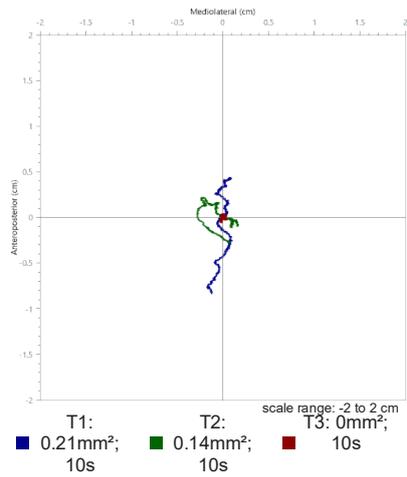


scale range: -2 to 2 cm

| T1: | T2: | T3: 0mm²; |
|---|---|---|
| ■ 0.21mm²; 10s | ■ 0.14mm²; 10s | ■ 10s |

## 2. Firm surface eyes closed



scale range: -2 to 2 cm

| T1: | T2: | T3: |
|---|---|---|
| ■ 0.01mm²; 10s | ■ 0.01mm²; 10s | ■ 0.02mm²; 10s |

## 3. Foam surface eyes opened



scale range: -2 to 2 cm

| T1: | T2: | T3: |
|---|---|---|
| ■ 0.48mm²; 10s | ■ 0.06mm²; 10s | ■ 0.08mm²; 10s |

## 4. Foam surface eyes closed



scale range: -2 to 2 cm

| T1: 1mm²; | T2: 0.6mm²; | T3: |
|---|---|---|
| ■ 10s | ■ 10s | ■ 0.59mm²; 10s |
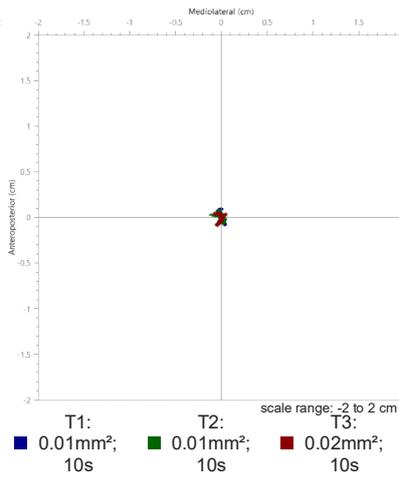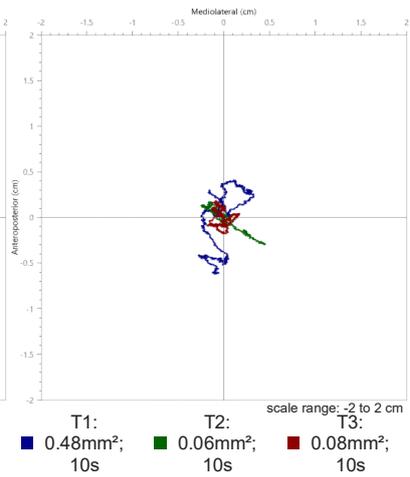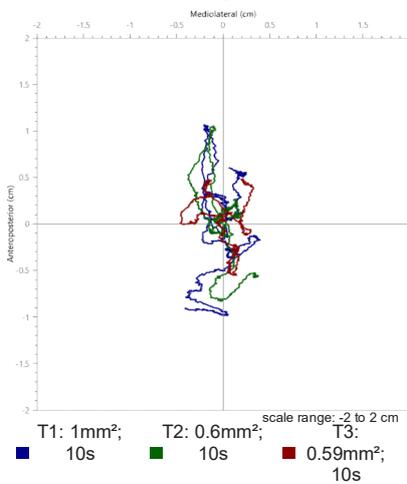
## 5. Limits of Stability



## 6. Sit-to-Stand

### Trial 1



### Trial 2



### Trial 3



■ Weight time transfer  ■ Left side  ■ Right side  ■ Maximum diferential

frequency acquisition: 100Hz
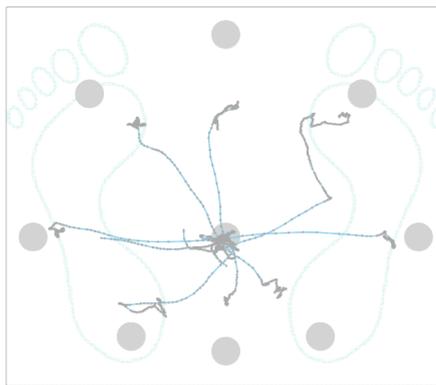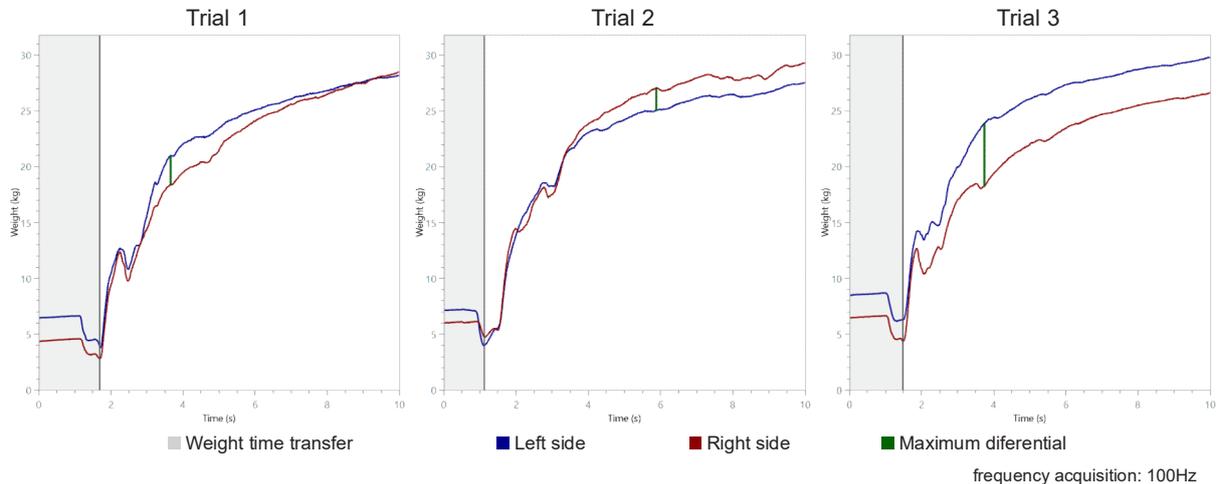
# Detailed Results

## Proprioception

### Sway velocity (°/s)*



0.59     **< 0.49**

Firm-Eyes Closed
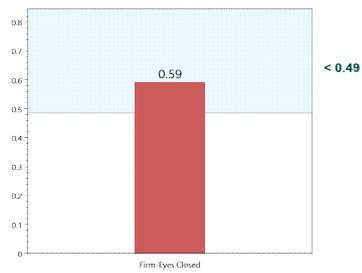
## Vestibular & Visual input

### Sway velocity (°/s)*



Foam-Eyes Open   0.898    **< 0.78**

Foam-Eyes Closed   1.002    **< 2.03**
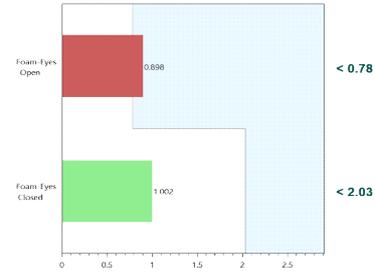
## Postural stability

### Sway velocity (°/s)*



0.63     **< 0.4**

Firm-Eyes Open

### COP Alignment*



o = Firm-Eyes Open
+ = Firm-Eyes Closed
* = Foam-Eyes Open
x = Foam-Eyes Closed

**COP Alignment**
**Left/Forward, 15%LOS**
**@276.3°**
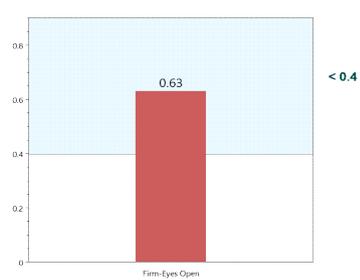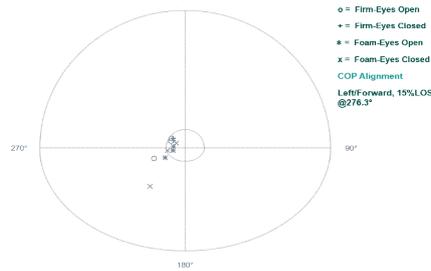
## Lower limb strength

### Endpoint Excursion (%)†



| | | |
|---|---|---|
| Front | 64.856 | **> 60.5** |
| Back | 68.603 | **> 26.25** |
| Right | 59.668 | **> 58.94** |
| Left | 84.168 | **> 74.16** |
| Composite | 67.841 | **> 68.63** |

### Maximum Excursion (%)†



| | | |
|---|---|---|
| Front | 81.047 | **> 77.68** |
| Back | 73.365 | **> 40.76** |
| Right | 79.694 | **> 84.93** |
| Left | 92.291 | **> 91.51** |
| Composite | 80.330 | **> 86.44** |
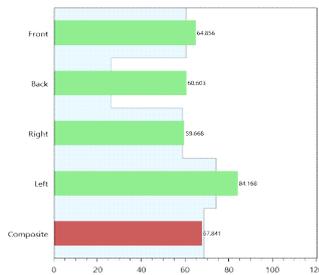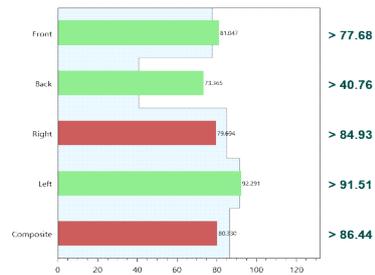
### Rising index (% body weight)‡



27.64     **> 9.20***
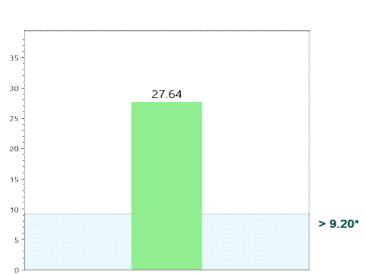
## Reflexes & Reaction time

### Reaction Time (s)†



| | | |
|---|---|---|
| Front | 1.203 | **< 1.22** |
| Back | 0.018 | **< 0.94** |
| Right | 0.232 | **< 1.13** |
| Left | 0.807 | **< 1.25** |
| Composite | 0.695 | **< 1.01** |
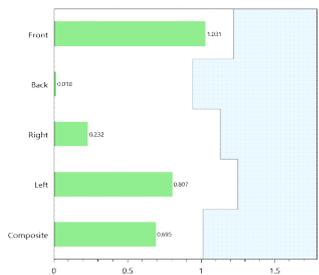
### Weight time transfer (s)‡



1.43     **< 0.89***
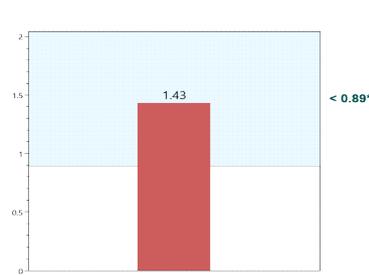
## Motor control

### Direction Control (%)†



| | | |
|---|---|---|
| Front | 59.736 | **> 63.4** |
| Back | 74.310 | **> 26.45** |
| Right | 73.722 | **> 59.9** |
| Left | 68.847 | **> 69.41** |
| Composite | 73.153 | **> 63.44** |

### Movement Velocity (°/s)†



| | | |
|---|---|---|
| Front | 2.444 | **> 1.67** |
| Back | 1.770 | **> 0.65** |
| Right | 2.356 | **> 1.58** |
| Left | 2.656 | **> 1.1** |
| Composite | 2.349 | **> 2.06** |
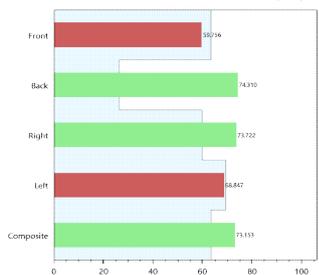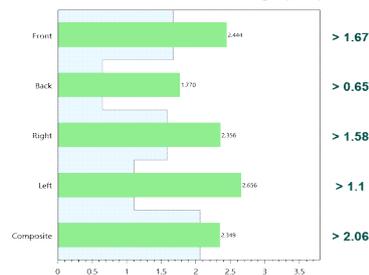
### Left/Right symmetry (%)‡



4.9%     **< 11.59***
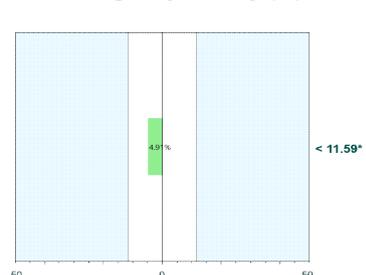
\* Static Balance Tests; † Limits of Stability; ‡ Sit-to-Stand

www.physiosensing.net

**physio**
sensing