BTS G-WALK

Complete solution for the evaluation of the spatio-temporal gait parameters
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BTS G-Walk is the ideal solution for providing accurate, reliable and objective outcome data for analysis of a wide range of gait disorders.

BTS G-WALK consists of a wireless system of inertial sensors that, when positioned around the patient’s waist (on L5 vertebrae), allows for an objective functional gait analysis that provides accurate, objective and quantitative data.

It is intuitive and easy to use, and does not require extra subject preparation. Thorough and informative reports are generated automatically to be utilized as part of baseline and follow-up rehabilitation programs, or for orthotic and prosthetic interventions.

Spatio-temporal parameters analysis
The system calculates spatio-temporal gait parameters that are a powerful and easy-to-use tool for the functional evaluation of neurological and orthopedic patients, allowing for objective analysis of motor capabilities and treatment results.

Pelvic kinematic analysis
Kinematic information provides for anteroposterior rotation, antiretroverion, and lateral tilt of the pelvic girdle.

Comparison with normative data
Automatically generated reports provide normative data for easy comparison with acquired gait parameters. Comparison of results provides visual, graphic and intuitive understanding of changes in gait parameters.

Evaluation Test
BTS G-WALK includes WALK, a protocol validated by the scientific community for the analysis of the gait. ¹

Other test protocols also available:
- TUG (Timed Up and Go)
- Free Test
- Turning
- Jump

¹ CHARGE ON-OFF Powered by BLUETOOTH®
Spatio-temporal gait parameters

- Speed
- Cadence
- Step length
- Stride length
- Step width
- Gait cycle duration
- Stance duration
- Swing
- Single and double support

Objective use of gait parameters allows for:
- Quantifying gait characteristics of hemiplegic patient
- Pre and post documentation of orthopedic surgical candidates
- Accurate and consistent baseline and follow up of patient progress during recovery and rehabilitation
- Use in balance and falls prevention program
- Outcome measures which may assist in the reimbursement process

Moreover, there is an asymmetry in the different step phases and an increased energy expenditure.

Parkinson’s disease
Spatio-temporal gait parameters are indicators of rehabilitation treatment efficacy, particularly pharmacological interventions.

In fact it has been demonstrated in literature how the spatial parameters (such as the step length) are DOPA-dependent, unlike the temporal parameters (such as stance and swing phase) that are DOPA-resistant. ²

Fall Risk Prevention
Differences in mean values of gait parameters, such as speed, stride length and double support time are associated with falls risk. Short-term variability in gait parameters, measured every three months, can be a predictive factor in falling.³

Orthopedics application
Gait assessment is an integral part of orthopedic interventions in the lower extremities. G-WALK can be used to monitor compliance with treatment protocol and maximize functional recovery through the objective analysis of treatment results.

Applications and software features:

**WALK Protocol (Standard)**

- Speed
- Cadence
- Step length
- Stride length
- Step width
- Gait cycle duration
- Stance duration
- Swing
- Single and double support

**TUG Protocol (Optional)**

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## BTS G-WALK

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### Components and accessories

<table>
<thead>
<tr>
<th>Std. Equipment</th>
<th>Add-on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless inertial sensor</td>
<td>●</td>
</tr>
<tr>
<td>Belt with pocket for the sensor positioning</td>
<td>●</td>
</tr>
<tr>
<td>Belt extension</td>
<td>●</td>
</tr>
<tr>
<td>Transport bag</td>
<td>●</td>
</tr>
<tr>
<td>Pre-configured ready to use workstation</td>
<td>●</td>
</tr>
<tr>
<td>BTS G-Studio software</td>
<td>●</td>
</tr>
<tr>
<td>WALK protocol</td>
<td>●</td>
</tr>
<tr>
<td>Additional analysis protocols</td>
<td>●</td>
</tr>
<tr>
<td>Up to 2 webcam for video recording</td>
<td>●</td>
</tr>
</tbody>
</table>

### Technical features*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>78x48x20mm</td>
</tr>
<tr>
<td>Weight</td>
<td>62 gr</td>
</tr>
<tr>
<td>Sensor typologies</td>
<td>Tr-axial accelerometer with multiple sensitivity (±1.5g, ±6g)</td>
</tr>
<tr>
<td></td>
<td>Tr-axial magnetometer</td>
</tr>
<tr>
<td></td>
<td>Tr-axial gyroscope with multiple sensitivity (±300gps±1200gps)</td>
</tr>
<tr>
<td>Battery</td>
<td>rechargeable via USB</td>
</tr>
<tr>
<td></td>
<td>18/24 hours of autonomy</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Bluetooth*</td>
</tr>
<tr>
<td>Frequency</td>
<td>up to 200Hz</td>
</tr>
<tr>
<td>Working</td>
<td>real-time</td>
</tr>
</tbody>
</table>

### User PC minimum configuration**

<table>
<thead>
<tr>
<th>Component</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Windows 7Pro 64Bit</td>
</tr>
<tr>
<td>Processor</td>
<td>CPU Intel i3 dual core</td>
</tr>
<tr>
<td>RAM</td>
<td>2 GB</td>
</tr>
<tr>
<td>Video board</td>
<td>RAM 256Mb resolution 1024x768</td>
</tr>
<tr>
<td>Disk space</td>
<td>320GB</td>
</tr>
<tr>
<td>USB</td>
<td>2.0</td>
</tr>
<tr>
<td>Connections</td>
<td>Gigabit Ethernet, Wifi, Bluetooth</td>
</tr>
</tbody>
</table>

* Technical features and equipment may be subject to change without notice. Images shown in this brochure are indicative only, color or model may differ from the picture shown.

** The PC is not included in the standard equipment. BTS G-WALK is compatible with PCs that meet the requirements indicated in the table.