

DST8000 Triple Sense

Full gait analysis for full gait rehabilitation



Stairs practice



Slope practice



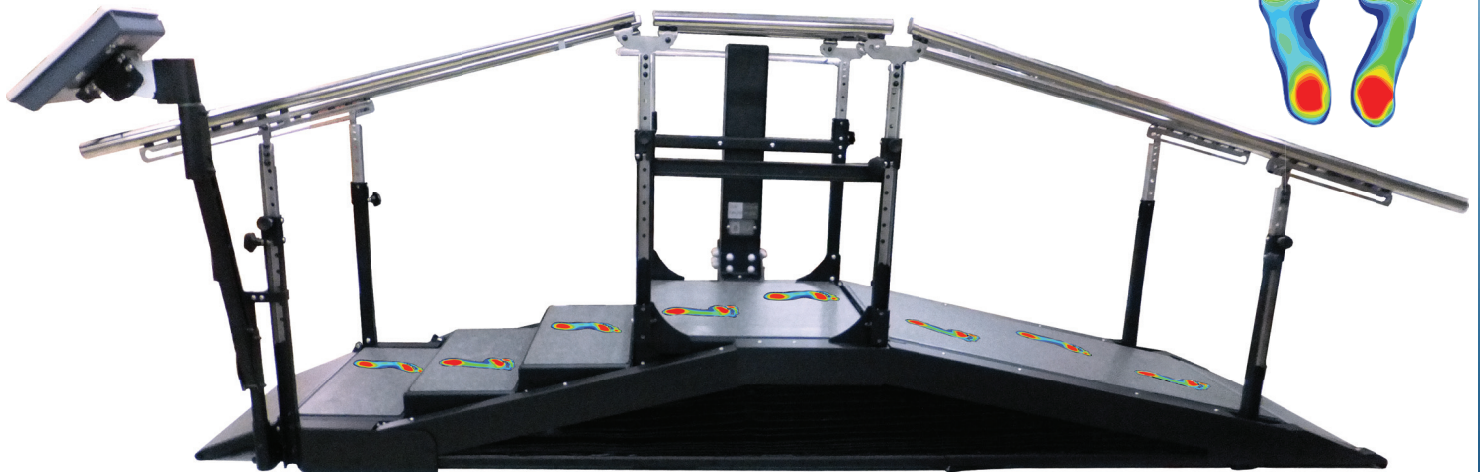
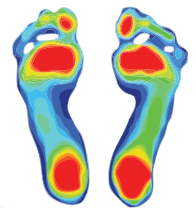
Parallel Bars



Sense system

Optimizing Physiotherapy

The DST Triple Sense is the only device in the world to combine all three gait functions - flat surface walking, climbing stairs and negotiating slopes, with the most advanced gait analysis technology. Our full gait analysis system takes patient performance to the next level, providing a comprehensive, evidence-based treatment, tailored to each patient's needs and capabilities.



The DST Triple Sense combines all three mandatory gait functions – flat-surface walking, climbing stairs and negotiating slopes, with integrated force plates and advanced software. With a click of a button, therapists can adjust the angle of the slope and the height of the stairs, to meet patients' needs, and analyze their performances with the Sense system. **Our revolutionary device helps diagnose, treat, and study patients' ambulatory capabilities** on neurological, orthopedic, and geriatric rehabilitation.

SENSE SYSTEM

Patient's name

Stair Height:

12 cm

Slope Angle:

19 deg

Present information for:

Parallel Bars

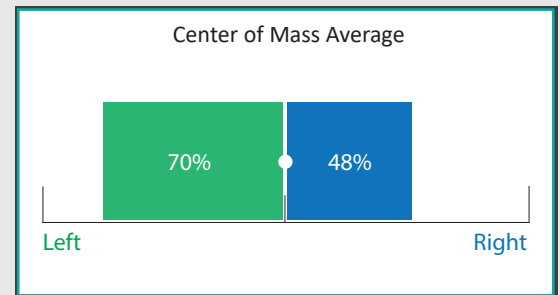
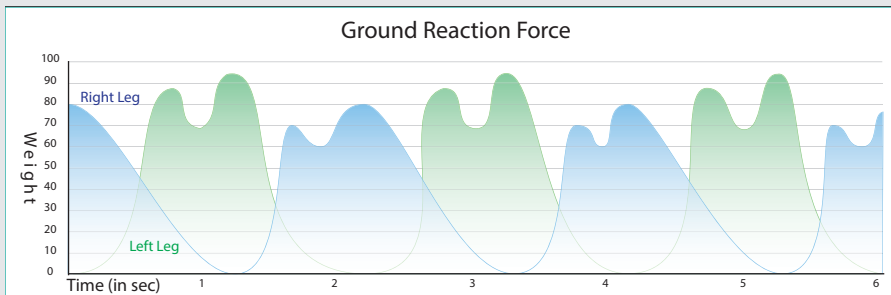
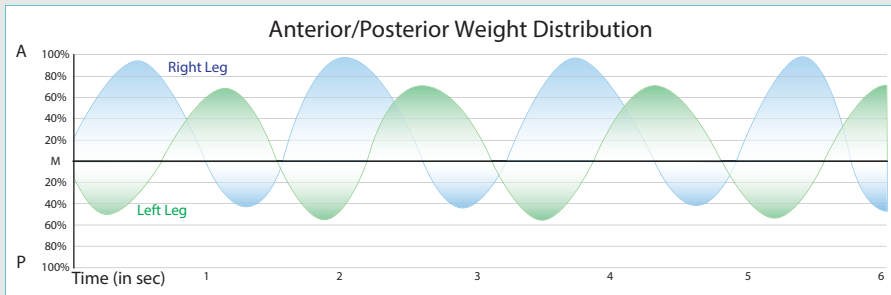
Slop

Stairs

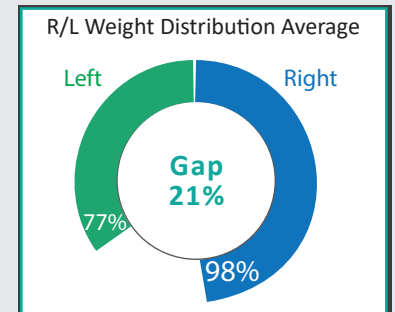
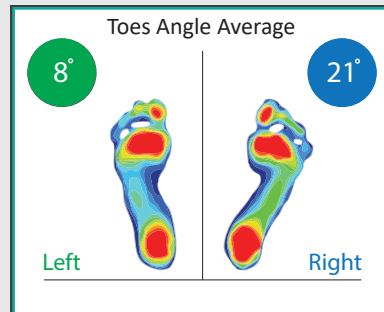
Present information for practice:

Ascend

Descend



Step Time (in sec)	Step Length (in cm)	
Right Leg	Left Leg	Gap
4	2	2 (R)
4	2	2 (R)
3	1	2 (R)
4	2	2 (R)
4	1	3 (R)



Analyzed data includes: Stair usage – ascend/descend height and time. Slope usage- ascend/descend degree and time. Parallel bars – 3 meter walk-time. Step time and length. Ground reaction force. Anterior/Posterior weight distribution. Center of mass. Right/left weight distribution. Toes angle.

The Sense system can be accessed in two ways:



Quick access

- No pre-registration of patient is required
- No password required
- No recording of data



By Patient

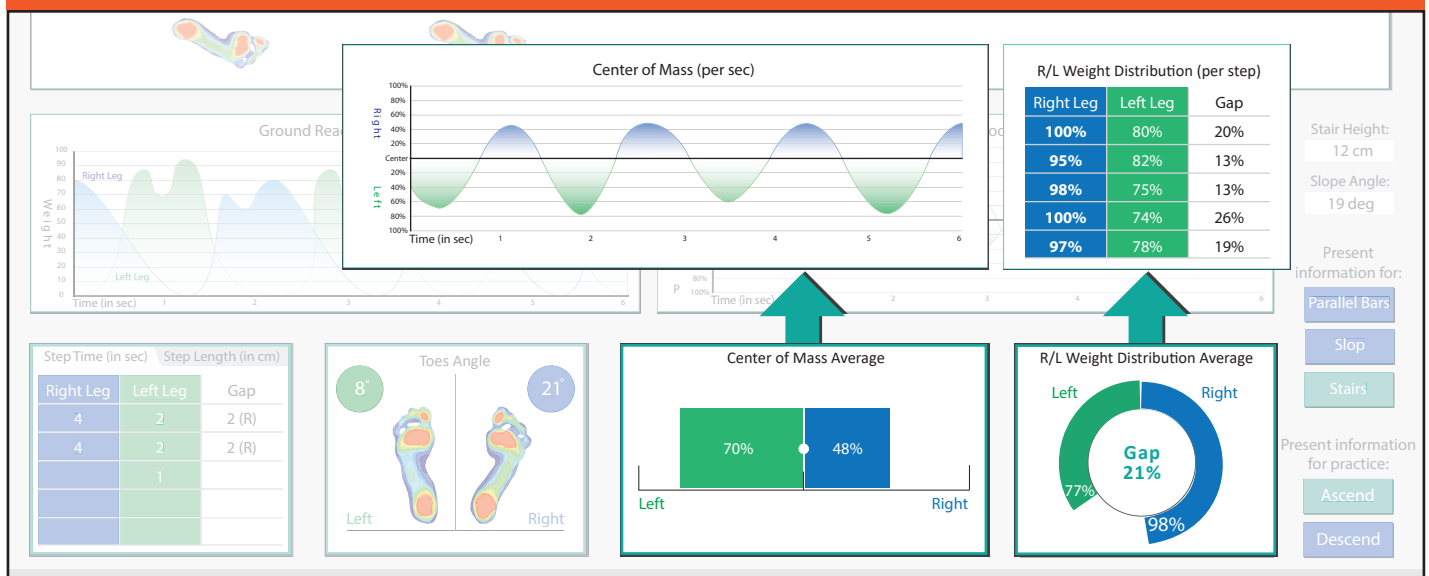
- Pre-registration of patient
- Password protected
- All data is recorded

Diagnosis

Bridging the void between the clinic and the lab

The lack of evidence-based measuring tools makes it difficult to justify treatment to insurance companies. This in turn denies patients from maximizing their rehabilitation potential in minimum time. DST Triple Sense bridges the technology void between the clinical and laboratory environments. Clinicians can now implement the most effective treatment for each patient based on hard evidence – without consuming precious lab resources such as time, space, and labor.

Information can be displayed both by step/sec and by session's average:



Diagnose you patients' source of impairment, create an accurate treatment plan, and keep track on their progress – all without leaving the clinic!

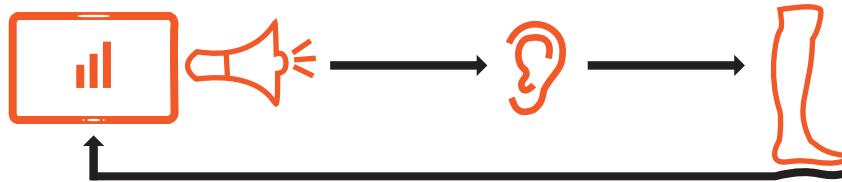
DST Triple Sense system is the only mechanism which enables gait analysis and diagnosis of movement impairments in all three areas: parallel bars, stairs, and slope. The system provides data regarding step length and time, uneven weight distribution, central of mass positioning, weight distribution of the foot, and more. The obtained information will help

you identify the root causes of your patient's impairments, create an accurate treatment plan, keep track of a patient's progress, and reveal risk factors inherent in dangerous situations, such as falls. **The bottom line is simple** – maximum rehabilitation potential, optimal treatment efficiency, and reduction of rehab costs and durations.

Treatment

Using real-time biofeedback

Physiotherapists must multi-task, keeping patients safe and motivated while maintaining correct posture, motion and more. The DST Triple Sense puts an end to this struggle by employing visual and auditory biofeedback to help patients regain control and stay motivated during the exercise. Physiotherapists can now guide and secure their patients throughout the course of the exercise without having to worry about its quality or missing compensations.



How it works

Clinicians can choose the most relevant movement pattern for their patient to practice and use real-time biofeedback to improve upon it. For example, a clinician can decide to focus on symmetric weight bearing between the legs, and adjust the

acceptable asymmetry thresholds. When the patient rises to the challenge and performs within the thresholds, a positive feedback signal will be heard. If the patient deviates from the decided thresholds, the positive auditory feedback will stop.

The benefits of real-time gait biofeedback in rehabilitation has already been proven to encourage significant and clinically relevant improvements (Gelder, 2017; Genthe, 2018). The DST Triple Sense takes these benefits to the next level by providing real-time feedback on patient's performance on stairs, slope, and flat surface.

Allowing patients to track their progress in an accurate and timely manner, and rewarding them accordingly with real-time positive feedback, will increase their motivation and overall commitment to the rehabilitation process.

Independent practice

With the real-time biofeedback feature, patients can practice independently, without compromising the quality of the exercise. By determining acceptable thresholds for different parameters, the

clinician can set a treatment plan for each patient to practice on their own. This unique capability enhances efficiency and conserves precious time, space, and resources.

Research

Advancing the field of gait rehabilitation

The research field of movement analysis is vast and holds great opportunities. DST Triple Sense is the only instrument in the world to combine all three gait functions with force plate measurement technology, for a full-scale movement analysis.

Reducing falls among elderly

A truly groundbreaking research opportunity lies in the clinical development of metrics for setting threshold tests to reduce stair-related falls among the elderly.

In the USA alone, over 3 million people above the age of 65 fall annually. Nearly 30,000 dies consequently, making this the primary cause of inadvertent morbidity and mortality among this

age group (Prevention, 2016). Studies indicate that falls amongst the elderly are the most likely to recur, significantly decreasing quality of life, creating hospitals overload, and costing 30 billion USD in average per year (Burns ER, 2016; Nevitt MC, 1989). Developing acceptable threshold parameters to reduce falls among the elderly will save lives, money, and resources.

Other research opportunities include an analysis of the correlation between movement patterns occurring during stairs and slope negotiation and their clinical consequences, and the impact of diverse exercise methods over patients' performances, evaluated with real-time biofeedback.



Technical specifications highlights:

The DST Triple Sense consists of:

- 4 adjustable stairs (height from 0 to 16.5 cm)
- An adjustable ramp (angle from 0 to 26 degrees)
- In Horizontal position – 3 meters parallel bars
- Total device size – 360/110 cm (141.7/43.3 inch)

Sensors:

- 9 Sensor array mats- located on all stairs and major ramp
- Total active sensor area: 556x2,430mm
- Total number of sensors: 13,122
- Sensors' weight capacity: up to 5Kg per cm²

Computer:

- Integrated touch screen monitor
- OS: Windows 10
- Sense system (developed by DPE Medical)
 - Intuitive graphical user interface
 - Coherent pressure data analysis

Contact us

 **Dpe Medical Ltd.**
 info@dpemed.com
 www.dpemed.com
 +972 2 579 1177

