REHA
TECHNOLOGY

G-EO SYSTEM™

training more, **more effectively**

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Your solution for gait rehabilitation

The G-EO System is the world's most versatile robotic end-effector gait rehabilitation device, based on a modular platform concept.

Developed to address specific patient needs throughout the continuum of care, the **G-EO System** offers different modules and therapy options such as partial movements, floor and backward walking and the unique feature of **realistically simulating stairs and slope climbing** (ascending and descending).

In addition, with the simple switch between passive, active-assistive and active mode, the G-EO System can be adjusted to patients with different levels of impairment.

> The G-EO System has proven to be an excellent addition to our facility. It has enhanced the progress of gait training for our patients with physical and neurological limitations at all ages.
>
> **Dr. Leann Kerr, PT, CBIS, DHS**
> Bellarmine University, Louisville, Kentucky

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Take your first step with G-EO ENTRY

G-EO ENTRY offers the core rehabilitation functions of floor walking and partial movements in passive mode.

With adjustable settings such as **cadence**, **step length**, **ankle angle** as well as **dynamic body weight support** and **center of mass movement**, the G-EO System offers different applications in gait rehabilitation. Pre-defined disease specific programs allow maximizing available therapy time. Furthermore, a detailed reporting system tracks patient progress and allows the evaluation of data to improve current therapy methods.

The modular concept enhances the treatment possibilities to a variety of patient populations with different needs for adults and children.

The G-EO is a terrific robotic gait training tool.
Easy to use and with great versatility this "end-effector" device allows training for stair climbing and descent.

Alberto Esquenazi, MD
Director, Sheerr Gait and Motion Analysis Laboratory
Moss Rehab, Elkins Park, PA

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Functions

- Patient reporting
- One harness size
- Floor walking (passive)
- Partial movement
- Standard protocols
- Built-in foot sensors

Adjustable settings

- Step length
- Cadence
- Step width
- Ankle angle
- Max. speed 2.3 km/h (1.4 mi/h)
- Dynamic body weight support
- Horizontal hip activation

Patient Specifications

Height 140cm (4.6 ft.)
to 200cm (6.5 ft.)
Max. weight 150kg (330 lbs.)

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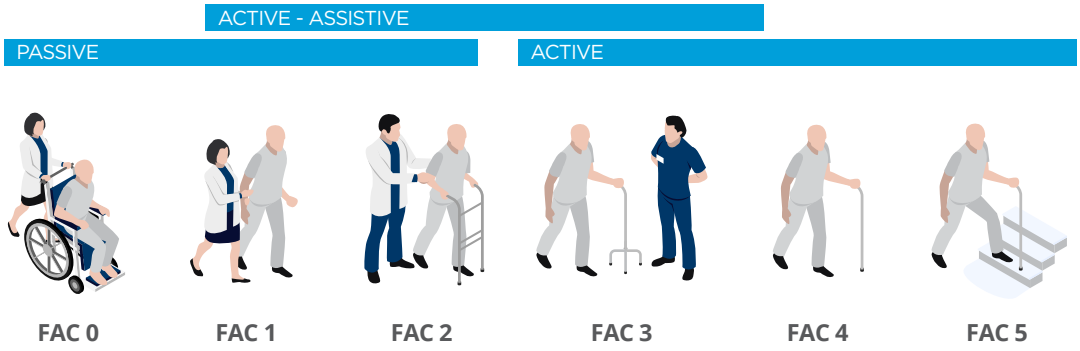
Treat different patient indications

Rehabilitation throughout the continuum of care.

The **G-EO System** sets new standards in rehabilitation technology in terms of its great versatility, as it offers a wide range of different application possibilities. By choosing from a wide range of modules, the therapy can be tailored to the specific needs of each individual patient.

The G-EO System can be adjusted to patients with different levels of functional ambulation capabilities (ranging from FAC 0 to FAC 5).



FAC Functional Ambulation Category

Holden MK, Gill KM, Magliozzi MR, Nathan J, Piehl-Baker L. Clinical gait assessment in the neurologically impaired. Reliability and meaningfulness. Phys Ther. 1984;64(1):35-40. http://www.ncbi.nlm.nih.gov/pubmed/6691052. Accessed September 22, 2017.

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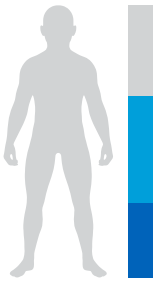
Subacute Stroke Patients - Therapy Comparison.

Conventional Therapy **VS** Treadmill Training w/wo BWS **VS** End-Effector Robotic Gait Training.

Better Therapeutic Outcomes.

Two separate groups of 15 patients (**subacute stroke** FAC 0-2 at study start).

END-EFFECTOR G-EO System	CONVENTIONAL Physiotherapy
10/15 Regain independency in **walking** at study end.	**4**/15 Regain independency in **walking** at study end.
4/15 Were able to **climb stairs** at study end.	**1**/15 Was able to **climb stairs** at study end.



Hesse S, Tomelleri C, Bardeleben A, Werner C, Waldner A. Robot-assisted practice of gait and stair climbing in nonambulatory stroke patients. J Rehabil Res Dev. 2012;49(4):613-622.

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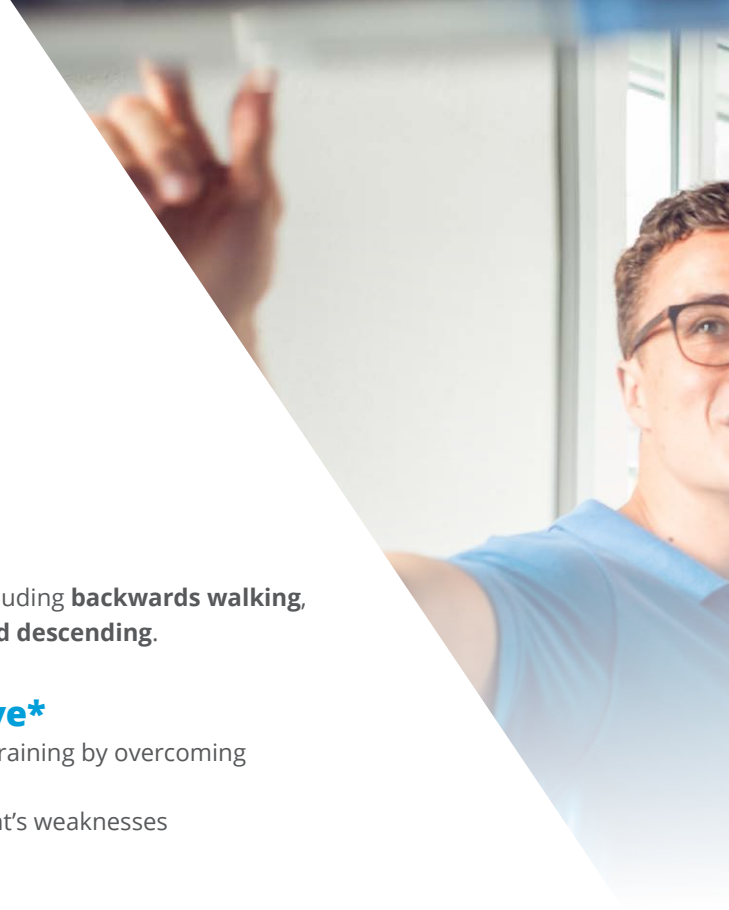
Customize your G-EO



⊕ Trajectories

Selection of different therapy exercises including **backwards walking**, **stairs and slope climbing - ascending and descending**.

⊕ Active and Active-Assistive*

ACTIVE: patient's self-initiation of the gait training by overcoming a pre-selected resistance.
ACTIVE ASSISTIVE: compensation of patient's weaknesses in the initiation of the movement.

*Available on floor and stairs climbing - ascending

⊕ Pediatric

Treatment of children **starting as small as 90 cm** (3 ft.) **weighing up to 75 kg** (165 lbs.).
Includes pediatric designed footplates, pediatric harness and cushion kit for feet adjustment.

⊕ Functional Electrical Stimulation (FES) by Hasomed®

Enhancement of muscle activation through multiple stimulation channels.

⊕ Knee Support

Additional knee stabilization during knee flexion and extension.
Available in pediatric and adult configuration.

⊕ Visual Scenario

Enhanced visualization of patient performance along with additional therapy options of walking in synchronized trails.

⊕ Heart

Integration of pulse and blood oxygen saturation into the captured data.

⊕ Research

Collection of data for medical studies through sensor technology.

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G-EO SYSTEM - MODULAR PLATFORM

FUNCTIONS	G-EO ENTRY
• patient reporting • one harness size • floor walking (passive) • partial movement • standard protocols • built-in foot sensors	✓
MODULES	
Trajectories - stairs up/down - slope up/down - backward walking	⊕
Active / Assistive - floor walking - stairs up	⊕
Pedriatic	⊕
Functional Electrical Stimulation (FES)	⊕
Knee Support	⊕
Visual Scenario (VS)	⊕
Heart	⊕
Research	⊕
SETTINGS	
• step length • cadence • step width • ankle angle • max. speed 2.3 km/h (1.4 mi/h) • dynamic body weight support • horizontal hip activation	✓
CONSUMABLES	
• harness (any size) • foot correction kit • hand support	⊕
Patient Specifications	Height 140cm (4.6 ft.) to 200cm (6.5 ft.) Max. weight 150kg (330 lbs.)

Clinical studies show superior results

The G-EO System is based on the clinically proven end-effector therapy concept.

The following publications show clinical evidence that patients who receive end-effector gait therapy have a significant higher rate of independent walking and are more likely to achieve superior gait ability compared to other therapeutic approaches.

INDICATION	PUBLICATION	COMPARED TO	PRODUCT USED
Subacute and Chronic Stroke	Sung J, You H, Kim HY. A Review of Robot-Assisted Gait Training in Stroke Patients. Brain Neurorehabil. 2017;10(2). doi:10.12786/bn.2017.10.e9.	**Conventional Physiotherapy**	**Robotic-Assisted Gait Trainers including G-EO System**
Subacute and Chronic Stroke	Mehrholz J, Thomas S, Werner C, Kugler J, Pohl M, Elsner B. Electromechanical-Assisted Training for Walking After Stroke: A Major Update of the Evidence. Stroke. June 2017. doi:10.1161/STROKEAHA.117.018018.	**Conventional Physiotherapy**	**Robotic-Assisted Gait Trainers including G-EO System**
Chronic Stroke	Mazzoleni S, Focacci A, Franceschini M, et al. Robot-assisted end-effector-based gait training in chronic stroke patients: A multicentric uncontrolled observational retrospective clinical study. NeuroRehabilitation. 2017;40(4):483-492. doi:10.3233/NRE-161435.	-	**G-EO System**
Parkinson's Disease	Galli, M. Robot-assisted gait training versus treadmill training in patients with Parkinson's disease: a kinematic evaluation with gait profile score, Functional Neurology 2016; 31(3):163-170	**Treadmill Training**	**G-EO System**
Parkinson's Disease	Galli, M., et al. Use of the Gait Profile Score for the Quantification of the effects of Robot-Assisted Gait Training in patients with Parkinson's Disease, RTSI, 2016 IEEE 2nd International Forum on RTSI	-	**G-EO System**
Progressive Supranuclear Palsy	Sale P, Stocchi F, et al. Effects of robot assisted gait training in progressive supranuclear palsy (PSP): a preliminary report. 2014; 8 (April):1-7. doi:10.3389/fnhum.2014.00207.	-	**G-EO System**
Parkinson's Disease	Sale P, Pandis MF De, Domenica LP, et al. Robot-assisted walking training for individuals with Parkinson ' s disease : a pilot randomized controlled trial. BMC Neurol. 2013;13(1):1. doi:10.1186/1471-2377-13-50.	**Treadmill Training**	**G-EO System**

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Ranging from severe neurological conditions to orthopedic gait dysfunctions, the **G-EO System suits for multiple patient indications**. The modular concept allows expanding the treatment possibilities to a variety of patient populations with different needs - for adults and children.

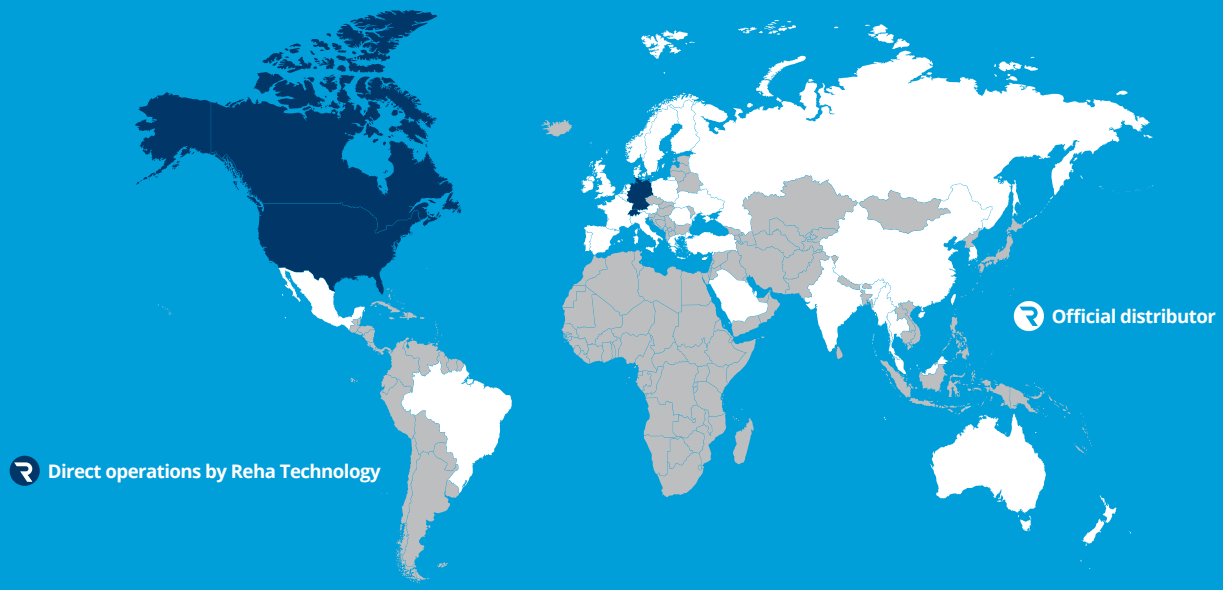
- **STROKE (SUBACUTE AND CHRONIC)**
- **PARKINSON'S DISEASE**
- **INFANTILE CEREBRAL PALSY (ICP)**
- **MULTIPLE SCLEROSIS**
- **SPINAL CORD INJURIES (SCI)**
- **TRAUMATIC BRAIN INJURIES (TBI)**
- **ORTHOPEDIC AND TRAUMATIC CASES**
- **AMPUTEES**

INDICATION	PUBLICATION	COMPARED TO	PRODUCT USED
Subacute Stroke	Hesse S, Tomelleri C, Bardeleben A, Werner C, Waldner A. Robot-assisted practice of gait and stair climbing in nonambulatory stroke patients. J Rehabil Res Dev. 2012;49(4):613-622.	**Conventional Physiotherapy**	**G-EO System**
Cerebral Palsy	Smania N, Bonetti P, Gandolfi M, et al. Improved gait after repetitive locomotor training in children with cerebral palsy. Am J Phys Med Rehabil. 2011;90(2):137-149. doi:10.1097/PHM.0b013e318201741e.	**Conventional Physiotherapy**	**End-Effector Gait Trainer (GT-1)**
Healty Subjects	Tomelleri C, Waldner A, Werner C, Hesse S. Adaptive locomotor training on an end-effector gait robot: evaluation of the ground reaction forces in different training conditions. IEEE Int Conf Rehabil Robot. 2011;2011:5975492. doi:10.1109/ICORR.2011.5975492.	**Treadmill Training**	**G-EO System**
Subacute Stroke	Hesse S, Waldner A, Tomelleri C. Innovative gait robot for the repetitive practice of floor walking and stair climbing up and down in stroke patients. 2010:1-10.	**Conventional Physiotherapy**	**G-EO System**
Subacute Stroke	Pohl M. et al. Repetitive locomotor training and physiotherapy improve walking and basic activities of daily living after stroke: a single-blind, randomized multicenter trial (DEutsche GAngtrainerStudie, DEGAS). Clinical Rehabilitation 2007; 21:17-27	**Conventional Physiotherapy**	**End-Effector Gait Trainer (GT-1)**

GS-PB/1806_EN

Reha Technology worldwide

Reha Technology's Direct Operations and Worldwide Distributor Network



HEADQUARTERS
Reha Technology AG
Solothurnerstrasse 259
4600 Olten
Switzerland

USA / CANADA
Reha Technology USA, Inc.
1787 Sentry Parkway West
Building 16, Suite 450
Blue Bell, PA 19422

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