NEW

Learning to walk again

Gait analysis and gait training for rehabilitation

REHA WALK

zebris

Rehawalk®- A New Concept for Treating Gait Disorders

The system is based on the proven h/p/cosmos treadmill systems that are available in different sizes and feature variations.
The treadmills can, for example, be equipped with arm support and a safety arch.

By using an integrated unweighting system, it is possible to commence the locomotion therapy at an early stage. As a complete system, the h/p/cosmos loco-motion 150/50 DE med additionally offers adjustable handrails, a wheelchair ramp and therapist seats.

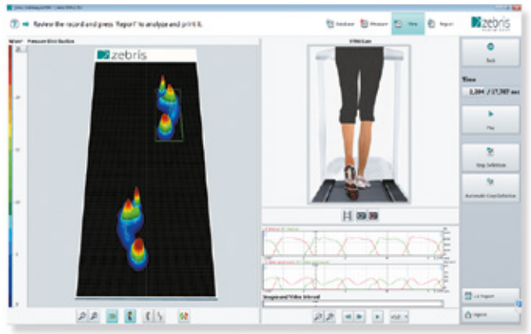
The zebris Rehawalk® system is designed for the analysis and treatment of gait disorders in neurologic, orthopaedic or geriatric rehabilitation.
In addition to a treadmill, Rehawalk® includes a unit for adaptive visual cueing through the projection of gait patterns on the treading surface. Virtual feedback training happens simultaneously with the help of a large monitor mounted in front of the treadmill.

A module for stance and balance analysis as well as balance training is optionally available.
Therapy with Rehawalk® assists patients in reaching a safe and effective gait through functional and cognitive challenges that can be individually adapted to the patient's capability. Due to the high number of step repetitions, an automation of motion sequences is achieved providing complete protection against falling and additional weight unloading at the same time.
The system automatically documents the course of treatment through the easy-to-operate software and in-depth evaluation reports.
For recording kinematic parameters and video documentation, an integrated lighting and camera unit is optionally available.

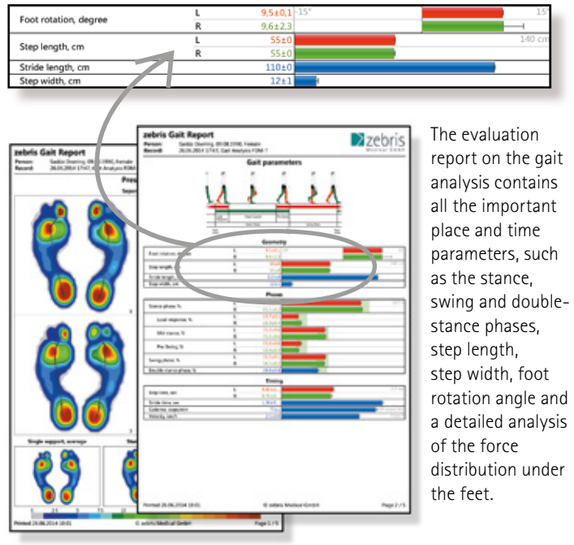
Underneath the belt, a pressure sensor matrix is installed featuring several thousand calibrated, capacitive pressure sensors.
The belt movement is compensated for accurate measurement

Gait training using adaptive visual cueing

1 Gait analysis

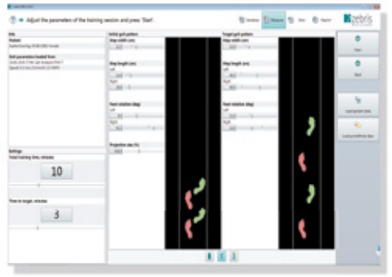


The initial gait analysis is carried out without any measuring preparations to be done on the patient. The measuring process can be observed on the screen in real-time. The report is automatically generated.

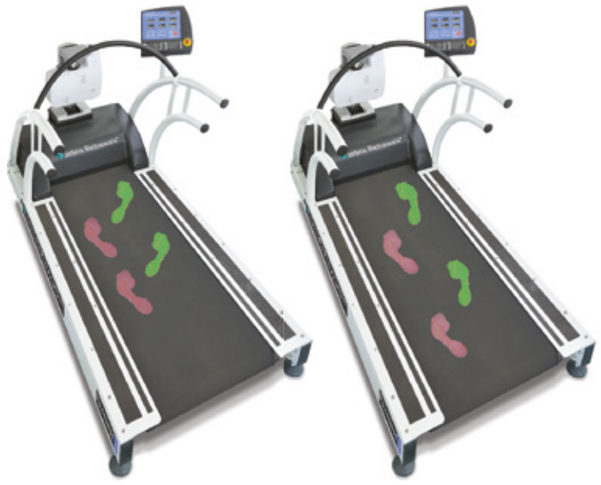


The evaluation report on the gait analysis contains all the important place and time parameters, such as the stance, swing and double-stance phases, step length, step width, foot rotation angle and a detailed analysis of the force distribution under the feet.

2 Setting the target parameters



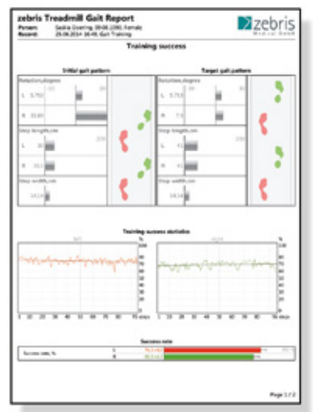
The gait parameters from the analysis in step 1 (step length, step width and foot rotation) are automatically populated and can be individually adjusted according to the training objectives.
The values remain constant or gradually approach the target settings during the course of the training.



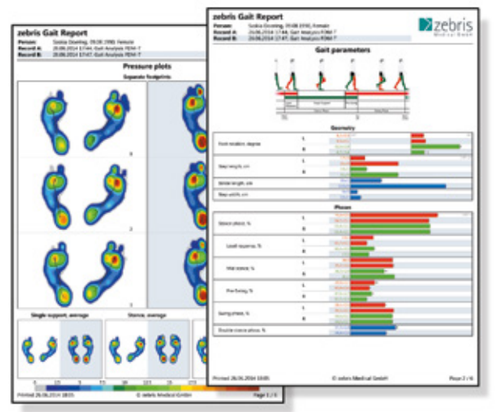
3 Gait training

During training the steps are projected onto the treadmill belt in the shape of the actual footprints, or alternatively as rectangles or as ovals.
Throughout the gait training the patient is instructed to position his or her feet as accurately as possible within the projected surface area.
Training is possible when using an un-weighting system and thus also allows for patients who are suffering from severe functional limitations to commence therapy even at an early stage.

4 Performance control and comparative analysis



The success report documents the adherence to the target settings.
On that basis, the target parameters can be adjusted to the patient's capability.



For an optimal training control, two gait analyses are compared, e.g. before and after a training period.

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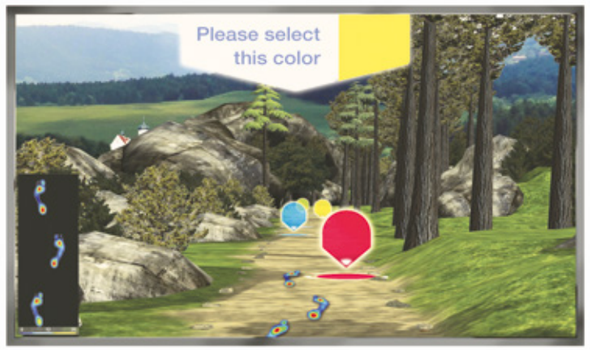
Gait and coordination training using virtual feedback

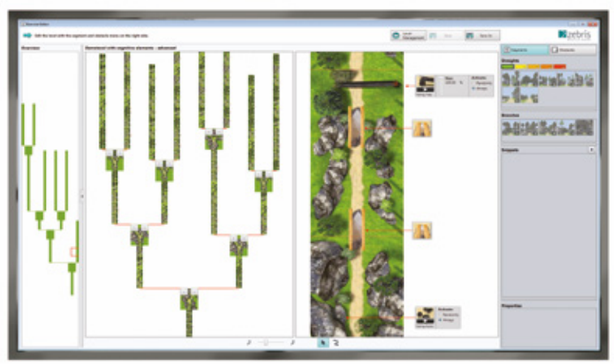
The patient moves in a virtual walking environment, and while observing the footprints performs various tasks which require a continual variation of walking and balancing. Postural control as well as coordination skills are checked and trained as a result.
The various modules allow the training to be individually adapted to each patient.

Physical and cognitive abilities are simultaneously demanded during dual-task-training.
The patient solves simple perceptual and memory tasks as well as arithmetic problems while walking.
Thus, reaction time and attentiveness are improved while simultaneously supporting automated walking.
In the course of the training, the level of difficulty can be varied and obstacles can be added.



In the virtual walking environment, the patient walks over obstacles, balances on stones or wooden footbridges and avoids falling rocks. Side paths provide new training scenarios.

Individual training levels can be created and stored with the optional editor.
At the same time, the number and level of difficulty can vary and be adapted to the patient's abilities.



Optional add-ons

Camera, lighting

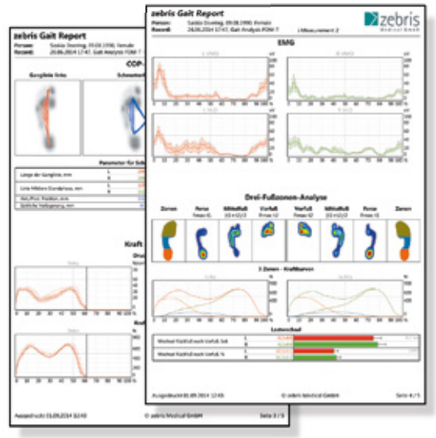
The zebris lighting and camera system is available separately or in one unit as a “SyncLightCam”. Joint angles can be quickly and easily shown and displayed in the report with a calculation module integrated in the software.
Lighting is adjustable in intensity and together with the camera it can be automatically switched on and off as well as time-synchronized by the treadmill system.

Stand systems

A completely aligned stand system is available for positioning the screen in front of the treadmill, for optimal operation of the evaluation computer and for mounting the camera and lighting unit.
Depending on the application, stands can be supplied in various versions with a solid base plate or with a mobile lower part as well as with electrical connections.

zebris Myography System

The fully synchronized zebris Myography system registers the muscle action potentials using bipolar electrodes placed on the skin surface.
The Myography system comprises 8 measuring channels and is connected via Bluetooth to the evaluation computer. The evaluation report of the Rehawalk® system shows the time-standardized EMG signals.



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robowalk® Expander System

The h/p/cosmos robowalk® Expander system supports the patient's movements with elastic expander cables. These are attached to the legs of the person training with comfortable cuffs. The front expander cables support the movement of legs when walking. The rear expander cables can be utilised to increase the gait resistance and as a gait correction unit.

The expander support's angle of tractive force can be adjusted individually. The system is ideally suitable for patients with restricted mobility, for orthopaedic as well as neurological rehabilitation in combination with the Rehawalk® system.

Distribution of robowalk® only via h/p/cosmos specialist dealers.

Technical data Rehawalk® Systems

	Speed	Running surface	Elevation	Sensor surface	Number of sensors
NEW  **pluto med**	0,5 - 18 km/h	150 x 50 cm	0 - 20 %	91 x 49 cm 95 x 47 cm	2808 6272
 **mercury med**	0 - 10 km/h 0 - 22 km/h	150 x 50 cm	0 -25 %	112 x 49 cm 108 x 47 cm	3432 7168
 **quasar med**	0 - 25 km/h	170 x 65 cm	0 - 28 %	132 x 56 cm 135 x 54 cm	4576 10240
 **locomotion 150/50 med**	0 - 10 km/h	150 x 50 cm	0 - 25 %	112 x 49 cm 108 x 47 cm	3432 7168
 **locomotion 190/65 med**	0 - 25 km/h	190 x 65 cm	0 - 25 %	162 x 54 cm 162 x 56 cm	5632 12288

Max. user weight: 200 kg · **Track access height:** 18 - 23 cm · **Color:** pure-white
Sampling frequency: 120 Hz · **Measuring range:** 1-120 Nm² · **PC interface:** USB ·

Discover further zebris measuring systems

The zebris FDM measuring platforms for stance and gait analysis: 1.5 m - 6 m.

The zebris FDM-S measuring system

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