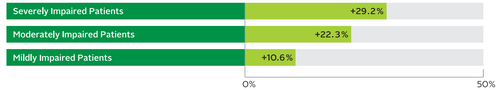
Clinical Improvements in the Upper Extremity after Stroke Treatment

The efficacy of recoveriX upper extremity treatment was shown in a group study with chronic stroke patients. Patients could move their upper extremities better after treatment. The improvement depended on the stroke severity but was always above the clinically important difference. The recoveriX therapy works even 10, 20 or 30 years after the stroke.

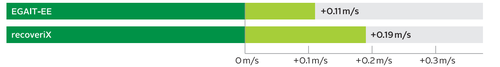
Upper Extremity Fugl-Meyer Assessment Improvements



Clinical Improvements in the Lower Extremity after Stroke Treatment

The efficacy of recoveriX lower extremity treatment was shown in a group study with chronic stroke patients. recoveriX patients improved their walking speed on average by 0,19 m/s. The best other treatment option (electromechanical gait training with end effector training) led to 0,11 m/s improvement. Importantly, recoveriX is easier to use and does not need a body weight support system because patients are seated during the recoveriX therapy.

10 Minute Walk Test Improvements



Effective rehabilitation and competitive advantages!

With only one recoveriX system, you can treat up to 90 patients per year, with 25 to 30 therapy sessions per patient. Using several recoveriX systems in your practice allows you to treat several patients at the same time.

Option 1: Joint practice or self-employment

Integrate recoveriX into your practice or open an independent recoveriX therapy center. Let us train a qualified member of your joint practice to carry out the recoveriX treatments in your facility.

We offer a comprehensive service package, including training for your therapists and various marketing activities. You recruit patients, schedule appointments, conduct consultations and carry out the treatment sessions with documentation. In addition to potential new customers for physiotherapy or a joint practice, you boost your reputation by using an innovative and successful new technique!

Option 2: Rehabilitation center

By purchasing one or multiple recoveriX therapy systems, you can significantly expand your range of services for neurological patients.

Boost your competitive advantage with state-of-the-art neurotechnology to help patients relearn how to move their arms, hands, and legs without hiring new people.

Requirements

Scientific studies

The effectiveness of recoveriX neurorehabilitation has been proven in scientific studies, including peer-reviewed papers in top journals. Stroke and MS patients showed significant and long-lasting improvements in their motor functions and spasticity in upper and lower extremities, regardless of age and initial impairment.

Sebastián-Romagosa, Marc, et al. "Brain–computer interface treatment for gait rehabilitation in stroke patients." *Frontiers in Neuroscience 17 (2023).*

Sebastián-Romagosa, Marc, et al. "Brain computer interface treatment for motor rehabilitation of upper extremity of stroke patients — A feasibility study." *Frontiers in Neuroscience 14 (2020).*

recoveriX neurotechnology: Request a quote now!

Contact us for detailed information on how you can successfully integrate recoveriX into your joint practice or rehabilitation center.

+43 7251 222 40 | **office@recoverix.at** | **www.recoverix.com**

Forbes

"recoveriX has been proven to help stroke and multiple sclerosis patients"

recoveriX is a medical product of the company g.tec medical engineering GmbH in Austria.

g.tec has been developing state-of-the-art brain-computer interfaces and neurotechnologies for clinical applications and research purposes since 1999. g.tec opened the first recoveriX therapy facility in Schiedlberg in 2016 and has been conducting studies on the effectiveness of recoveriX neurorehabilitation for various neurological diseases together with clinical partners ever since.

recoveriX
NEUROTECHNOLOGY

Neurorehabilitation for Stroke and Multiple Sclerosis

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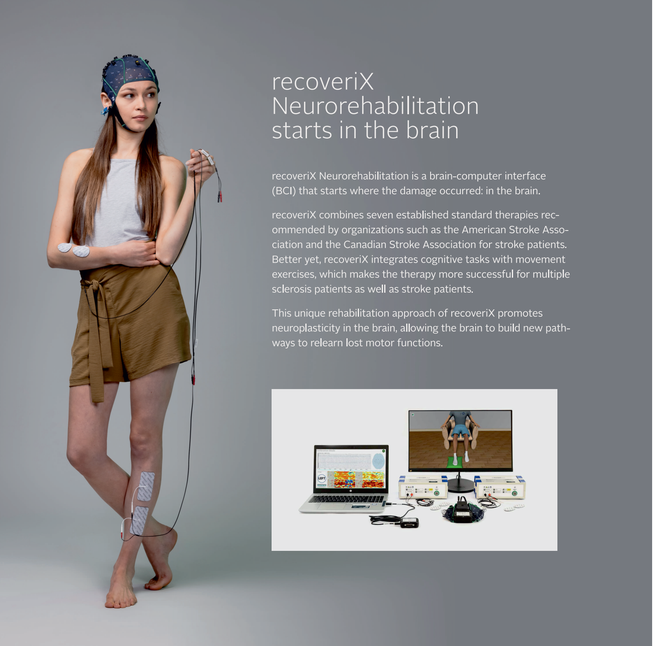


recoveriX Neurorehabilitation starts in the brain

recoveriX Neurorehabilitation is a brain-computer interface (BCI) that starts where the damage occurred: in the brain.

recoveriX combines seven established standard therapies recommended by organizations such as the American Stroke Association and the Canadian Stroke Association for stroke patients. Better yet, recoveriX integrates cognitive tasks with movement exercises, which makes the therapy more successful for multiple sclerosis patients as well as stroke patients.

This unique rehabilitation approach of recoveriX promotes neuroplasticity in the brain, allowing the brain to build new pathways to relearn lost motor functions.

MOTOR IMAGERY

Motor Imagery is a cognitive technique in which a person imagines a hand, foot or other movement without actually becoming physically active.

Brain plasticity is more pronounced by activating the corresponding brain regions through motor imagery. In contrast to conventional physiotherapy, recoveriX ensures that actual movements only take place with the corresponding mental imagery. This promotes Hebbian learning and increases the success of the therapy.

MIRROR NEURON THERAPY

Mirror neurons are activated when a person observes the same behavior in another person. When recoveriX recognizes the mental imagination of movement in the patient's EEG signals, such as the movement of the right hand, the virtual avatar on the screen simulates the corresponding movement in real time.

This visual feedback is similar to mirror neuron therapy.

VIRTUAL REALITY THERAPY

In this method, patients have to follow the avatar's instructions by simply imitating what is visualized and spoken. The recoveriX avatar can perform the movements that the patients imagine to increase motivation.

This approach to therapy is extremely easy for patients and they can participate effectively from the very first session.

FUNCTIONAL ELECTRICAL STIMULATION (FES)

In FES therapy, electrodes specifically stimulate the dorsiflexors of the forearms or legs. When recoveriX recognizes a correct movement pattern, real-time stimulation of these muscles occurs, resulting in actual hand or foot movements.

This encourages the brain to learn alternative ways to move and increases the patient's motivation to regain or improve motor skills.

BILATERAL TRAINING

recoveriX encourages the patient to practice motor imagery of both sides of the body, e.g. the affected right foot or the left hand. This approach is designed to support the activation of both hemispheres of the brain.

Stimulating both hemispheres of the brain improves the coordination of movements and increases fine and gross motor skills on the impaired side.

CONSTRAINT-INDUCED MOVEMENT THERAPY

During recoveriX therapy, the healthy limb is constrained to stimulate the impaired limb. Patients must repeatedly imagine the movements of both the healthy and the impaired sides.

This method promotes coordination between the two hemispheres and can help to reduce spasticity and normalize temperature regulation.

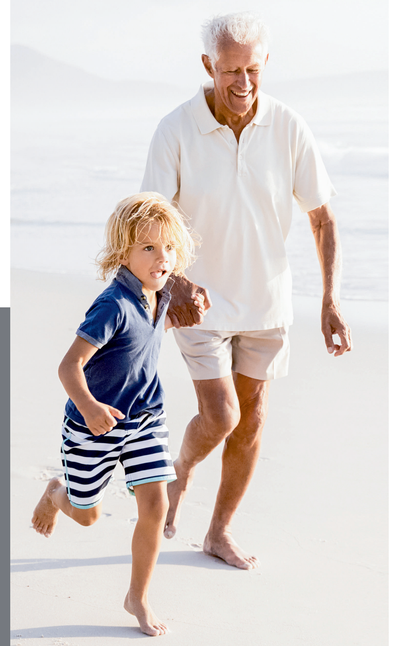
TASK-BASED TRAINING

By imagining the movement, the patient controls the avatar and can trigger actual movement through electrostimulation. If performed correctly, the hand or foot is raised and the patient can touch a small virtual ball.

The repeated activation of the movement promotes new neuronal connections in healthy areas of the brain, which ultimately control the muscle movements correctly.

The following improvements can occur after recoveriX therapy and are the result of the combination of physical and mental training:

- Improvement of active/passive mobility
- Improvement of the gait pattern
- Reduction of spasticity
- Improvement in sensitivity
- Increased memory
- Reduction of pain
- Reduction of tremor
- Greater ability to concentrate
- Improvement in speech
- Improved bladder control
- Improvement in gross and fine motor skills



Clinical Improvements from the MS Study

A group study showed that recoveriX was effective for upper and lower limb treatment. Multiple Sclerosis patients improved in standing up and sitting down, balance, walking speed, walking distance, spasticity, MS impact and fatigue. The improvement in fatigue is especially interesting because there is no other treatment available.