



RISE & WALK
IN CLINIC by HEALING INNOVATIONS

A smoother
path to better
outcomes.

Rise&Walk InClinic:

Research Summary

The Rise&Walk technology is an end-effector robotic gait training system, which is a style of therapeutic intervention backed by two decades of research. Robotic locomotor training is essential to provide repetitive, intensive, task-specific walking practice enriched with multi-sensory stimuli. It allows for the early application of these evidenced-based motor learning principles in the critical window of motor recovery for individuals with neurological diagnoses.

Numerous systematic reviews and randomized controlled trials have evaluated the clinical efficacy of robot-assisted gait training in individuals with conditions such as stroke, incomplete spinal cord injury, Parkinson's disease, cerebral palsy, Guillain-Barre syndrome, and multiple sclerosis. The results have shown statistically significant improvements in gait function, speed, endurance, and balance (1-12).

A systematic review comprising 36 randomized trials with 1,472 participants revealed that robotic-assisted gait training, when combined with physical therapy, increased the likelihood of participants achieving independence in walking compared to those who received gait training without these devices (15). Furthermore, end-effector systems like the Rise&Walk InClinic have been proven to yield greater improvements in gait speed compared to other exoskeleton devices (4).



Traditional vs Rise & Walk

Traditional overground gait training methods for individuals with stroke and spinal cord injury typically involve 50-357 steps per training session (16). In contrast, participants using the Rise&Walk InClinic can achieve 1,500-2,000 steps during a 30-minute session. Combining high-repetition stepping with the technology's high-intensity training applications creates an optimal environment for neuroplasticity and functional recovery, as proven essential in recent publications (13,14).

30 Minute Training Session

Typical step count for gait training methods for individuals with stroke and spinal cord injury

Traditional Training

50-357

Rise & Walk

1,500-2,000

Research Summary

While recovery of walking function is often the primary focus of robotic technology, the health and wellness benefits of robotic walking exercise should not be overlooked. Individuals with acute and chronic neurological disabilities have shown improvements in various areas of health, including bowel and bladder management, bone density, quality of life, metabolic, and cardiorespiratory health (17-21).

The Rise&Walk InClinic boasts unique features and parameters that can promote clinical benefits including: variable assistance with rating of perceived exertion (RPE) monitoring, backwards walking, multimodal/variable training applications, and an integrated arm swing.

Variable assistance and rating of perceived exertion (RPE) monitoring:

The RPE monitor enables the clinician to apply appropriate dosage and continuously monitor their patient's perceived exertion (RPE) throughout the training session. Current research indicates that individuals should train at 70-85% of their maximum heart rate to promote more beneficial effects of exercise and optimize functional recovery (22). Moreover, the variable assistance adjustment ensures individuals receive the appropriate level of assistance within the technology, keeping sessions highly intensive and engaging.

Backwards walking:

Backward walking is a unique and variable treatment option that can be performed in the Rise&Walk. Backwards walking has been shown to improve muscle strength, intralimb coordination, balance, gait function, and decrease fall risk in various patient populations (23,24). Compared with forward walking, backward walking is more effective at inducing cerebral activation. An increased oxygenated hemoglobin response during backward compared with forward walking in healthy adults, consistent with increased cortical processing, was observed in the supplementary motor area, primary motor cortex, and superior parietal lobule. This suggests that backward walking presents more of a challenge to the nervous system as it controls the stepping pattern(25,26).

Multi-modal/variable training:

The three- in-one rehabilitation station design enables a wide variety of therapeutic training including gait, cardiovascular, strength, balance, coordination, dual-tasking, and power training. Current evidence demonstrates that rehabilitation programs that combine multimodal exercise programs have superior benefits in walking speed, walking ability, and independence with ADLs (27,28).

Integrated arm-swing:

The Rise&Walk InClinic is the first ever robotic gait training that integrates a natural arm swing. Arm swing has been proven to be a critical component of walking and is necessary to improve gait symmetry, efficiency, and stability (29-30). Studies have shown that forward and backward arm swing can provide neuronal support for leg muscle recruitment during gait initiation and can therefore both serve as an effective gait rehabilitation method in patients with gait initiation difficulties.(29,30,31)

In summary, the Rise&Walk InClinic system is designed on clinically proven rehabilitation protocols that can improve neurological impairments and functional limitations due to its capacity to deliver high-repetition and high-intensity therapeutic training with individualized treatment applications.



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