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GaitBetter On Mission To Bring VR, AI-Based Solution To Gait Training; Will Physical Therapists Pay For It?

by [Marion Webb](#)

Israeli-based medtech company GaitBetter is hoping to make bigger strides in bringing its VR- and AI-based gait training and rehabilitation solution to more physical therapy clinics in the US.

GaitBetter has developed a digital therapeutic solution that adds a VR-based experience to treadmill use that it claims can reduce the risk of falls in older adults and improve gait.

The Israeli-based medical device company demoed its gait rehabilitation and fall prevention solution at the inaugural Digital Therapeutics Alliance Summit held in June in Washington, DC.



Studies have shown that social determinants of health, including social isolation, loneliness, and cognitive impairment, such as dementia, can impact mobility and increase the likelihood of falls as a person ages. In the US alone, more than 3 million older adults are treated in emergency rooms for fall injuries each year, and more than 800,000 of those patients are hospitalized, according to the Centers for Disease Control and Prevention. (Also see "[De Oro Devices' NexStride To Help Freezing Gait Is Targeting Expansion To Other Diseases, Software Integration](#)" - Medtech Insight, 15 Aug, 2022.)

GaitBetter co-founder and CEO Hilik Harari and senior vice president of US Operations Craig Hillman

Source: GaitBetter

sat down with *Medtech Insight* to discuss how GaitBetter is innovating gait rehabilitation and fall prevention therapy while hatching plans to increase its foothold in the US market amid reimbursement challenges.

GaitBetter's solution, which uses semi-immersive VR and proprietary computer algorithms, can be added to any treadmill, Harari explained. The software adds cognitive aspects to gait training to improve a person's ability to walk and, thus, reduce falls. According to the company, its VR treadmill is two times more effective than regular treadmill use, reducing total number of falls by up to 80% in studies.

Key Takeaways

Harari said while the solution was initially designed with older adults in mind, it can be used by anyone going through gait rehabilitation, including stroke survivors, people with neurological diseases like Parkinson's, and post-orthopedic surgery patients. (Also see "[ReWalk Robotics' Planned Acquisition Of Anti-Gravity Maker AlterG For \\$19M Paves Way To Profitability](#)" - Medtech Insight, 10 Aug, 2023.)

Users watch the movement of their feet on a screen mounted in front of the treadmill as they navigate hurdles and practice high steps and long steps while walking. The tailored program further challenges users to exercise cognitive skills such as memorizing the route to a barber shop and then navigating there, and incorporates gamified elements, for example asking the user to click a button when they see a cat on the display, all while practicing their motor skills.

GaitBetter has found that this kind of motor-cognitive intervention encourages brain plasticity, which makes the brain more efficient, Harrari said.

"All these collective skills we refer to as executive function, and what researchers have found ... is that collective functions have a tight relationship and a profound influence on gait and gait capabilities," Harari said. "What we know today is in aging and in various different neurological conditions such as Parkinson's, multiple sclerosis and stroke, execution function decline. And as they decline, they affect our gait capabilities."

Harari said that GaitBetter has done five intervention studies to date and multiple peer-reviewed studies that showed GaitBetter's benefits. The most recent fall prevention study from Maccabi Healthcare Services, Israel's second largest HMO, studied 200 older adults who were considered at medium to high risk for falls. The study found that 15 sessions of intervention with GaitBetter led to a 71% reduction in falls and 46% reduction in emergency room visits during the six months

after the intervention compared to six months before the program.

Founded in 2018 with technology licensed from the Tel Aviv Sourasky Medical Center, GaitBetter first introduced its solution in physical therapy centers in Israel. Compared with the US, Israel's health care system is focused on prevention, and the provider and payer are the same entity, which ensured coverage, Harari explained. Today, GaitBetter is installed in 70 locations in Israel.

GaitBetter made its debut in the US in 2021. To date, the technology is installed in about 30 facilities, including the Rusk Rehabilitation Center at NYU Langone Health in New York, the Baltimore VA Medical Center, Ochsner Medical Center in New Orleans, Louisiana, Burke Rehabilitation Hospital in White Plains, NY, and at the Spaulding Rehabilitation Hospital Boston.

Reimbursement Remains Challenge

The US health care market is attractive in terms of size, but doesn't pay for prevention, which is GaitBetter's "greatest value proposition," Hillman noted.

Hence, reimbursement remains a major barrier for wider adoption of the technology in the US.

GaitBetter's business model is a device-as-a-service subscription where the client pays an annual fee for the hardware – which is the tablet used by the therapist, a computer and special motion camera to detect foot movement – and the software. The baseline cost is about \$1,000 a month, plus \$1,500-\$4,000 for the one-time set-up fee and training for the therapist, Hillman said. He added that clients lease the tablet, computer and camera, but buy the recommended safety harness as well as the suspension bridge, which is a safety system used by physical therapists to

- *GaitBetter uses semi-immersive VR and proprietary computer algorithms to treadmills. By combining cognitive aspects to gait training, people can improve walking and reduce risk of falling.*
- *The firm is doing research on markers to identify and predict who will develop Alzheimer's or Parkinson's [disease] in the next five years with very high accuracy.*
- *A recent study found that GaitBetter can reduce falls by 70% and reduce emergency room visits by 46%.*
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prevent falls during gait training on the VR treadmill.

Hillman said the therapy is covered under existing CPT codes, such as for therapeutic exercise, therapeutic activity and gait training. Typical reimbursement under these existing CPT codes is about \$30-\$39 per 15-minute session. Insurers tend to cover between 15 and 25 sessions, he said.

“The challenge is they [provider] don’t get paid any additional funds for using GaitBetter,” he explained. “Physical therapy tends to be very low tech, very low capital equipment organization. Their biggest expense is staff – maybe they put a couple of cones on the floor – that’s about it. From a revenue perspective, it may be providing more effective outcomes, but they are actually losing money by bringing the technology on board.”



GaitBetter

GaitBetter hopes that payers will provide a high enough reimbursement for a new add-on code (0791T) to incentivize providers to use the equipment, he said. The add-on code, which applies only to gait training with the use of gamification and semi-immersive VR to simulate motor-cognitive challenges encountered in daily life, became effective on 1 July, as published in the American Medical Association Current Procedural Terminology (CPT) Category III codes. Several therapists have submitted requests for reimbursement under the new CPT code, but have not heard back, Hillman said, adding that GaitBetter will work with providers going through the appeals process.

Medicare coverage would be a huge win for GaitBetter’s ability to bring the device into hospital-based clinics, both men agreed.

“What’s actually really scary is the percentage of older adults who receive [conventional] gait training and then fall six months later,” Hillman said. “The number of falls is astonishing. ... If we can improve that outcome for that particular population, we could save Medicare roughly \$3.4bn.”

Sagi Giterman, GaitBetter’s director of product and clinical services, noted that since he started working for GaitBetter in 2019, the product has completely changed. And as GaitBetter’s product developer, he’s constantly working on refining the technology.

Asked what type of improvements he’d like to see going forward, Giterman said the firm is working toward eliminating the need for a “colored marker,” which has no sensors or electronics,

currently used for real-time tracking of the person's feet. He would also like to expand gait analysis parameters to include step length [down below, we suggest that they already have this] and step height. Further, he's interested in expanding the gaming options that focus on various cognitive elements such as memory, decision-making and response time.

"Each game combines a different set of skills you can use," he said. But the goal would be to create more variety to create an even more personalized experience for users depending on their needs. Finally, the user interface currently is a touchscreen. The plan is to offer therapists a portable tablet and users a phone app.

"For the therapist, it should be really easy to operate, and for the patients it should be fun and challenging," Giterman said.

Next Up: Home Edition, Biomarkers For Early Disease Detection

Next year, GaitBetter plans to introduce a GaitBetter home edition, which Harari dubbed the "Peloton for older adults," but that will require additional funding.

"This is more for wellness to make your exercise more fun, it's not part of therapy," Giterman explained.

To date, the start-up has raised \$3.6m in seed funding from angel investors and venture capitalists and \$750,000 in non-diluted grant money from the BIRD Foundation, he said.

Harari said that during an investment panel at the conference, it was recommended that companies raise funding 24 months before they run out of money, which he quipped wasn't an issue for him, because he never had money for 24 months.

"We just raised seed and then a pre-A, and we're looking to raise an A round when we find the right investor," he added.

Harari agreed that it's a tough environment for medical device companies to raise funding, but pointed to the firm's value proposition which extends beyond intervention. That includes data based on metrics such as step length, reaction time to cognitive questions, and gait symmetry while stressing the body during walking, which can provide insight into neurodegenerative decline.

"Imagine a stress test that measures your motor and cognitive interactions," Harari said. The company is working on an AI-based model that measures the brain's "reserve capacity" in the face of daily environmental challenges while walking.

"If you have enough reserves, you can sustain all of that; if you don't have enough reserves,

that's when we fail, and failing could lead to a fall," Harari explained. "We believe through our technology platform we can actually identify and predict who will develop Alzheimer's or Parkinson's [disease] in the next five years with very high accuracy," he said.

Harari envisions that this work could lead to partnerships with pharmaceutical companies, because it would help them identify candidates that have not yet developed disease for enrollment in clinical studies.