

Clalit and Motion Informatics Explore Innovative Technology for Neurological Rehabilitation Using Augmented Reality and Real-Time Data Analytics

As part of a collaboration between Clalit Haifa District and Western Galilee and Motion Informatics, an innovative technology in the field of neurological rehabilitation, which combines augmented reality (AR), functional electrical stimulation and advanced monitoring of muscle activity, is currently being tested. The system is in the evaluation and development stages, as part of the effort to promote innovative technological solutions in the field of rehabilitation.

The system, Spatial StimelMD (SSMD), combines muscular activity monitoring using superficial electromyography (sEMG), adaptively controlled functional electrical stimulation (FES), and an interactive augmented reality environment. The integration of the components allows the patient to receive feedback during the practice and provides the treating team with objective data on the patient's performance throughout the practice.

The system collects data on the quality of movement, range of motion and muscle activation during exercise, and presents it to the treating team. These abilities may contribute in the future to personalizing treatment plans and deepening the understanding of neurological rehabilitation processes, subject to the findings of the evaluation and research processes conducted on the subject.

The move is part of Clalit's innovation concept, which works to promote collaborations with medical technology companies and examine the integration of advanced technologies in the rehabilitation system, in accordance with the clinical needs of patients and treatment teams.

Dr. Michael Hauser, Director of Innovation at Clalit Haifa and Western Galilee District, said: "Medical innovation is measured by its ability to respond to the clinical needs of patients and caregivers. The collaboration with Motion Informatics allows us to test innovative technology in the field of neurological rehabilitation and learn how to integrate advanced digital tools into the treatment and rehabilitation processes in the community."

Tali Rappaport, Director of the Occupational Therapy Service and in charge of the project at Clalit, added: "The technology being tested incorporates an interactive practice environment and we are examining how it may contribute to the patient and the treatment team to track functional (physiological) data over time. As part of the collaboration, we are examining the clinical potential of the system and its possible contribution to the rehabilitation processes."

Gary Sagiv, CEO of Motion Informatics, said: "At Motion, we develop technological solutions that combine AI, biofeedback, electrical stimulation and augmented reality (AR) for the field of rehabilitation. The collaboration with Clalit allows us to continue developing the technology in an advanced clinical environment and adapting it to the needs of patients and caregivers."

The BioRhythmIQ technology, developed by the company, has been tested in clinical studies in the past and has demonstrated improvement in functional indicators in patients after a stroke. The company's new system, SSMD, is based on the technology of the first generation of the Stimel-03 product but incorporates new components including augmented reality and data analytics tools. The effectiveness of these components as part of the new system is currently being tested as part of evaluation processes.

The collaboration between Clalit and Motion Informatics reflects the commitment to promoting medical innovation and testing advanced digital technologies in the field of neurological rehabilitation, with the aim of continuing to develop therapeutic tools that support patients' rehabilitation processes.