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Singapore offers novel therapy to improve age-related frailty and metabolic disorders

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Brief weekly magnetic muscle therapy improves mobility and lean body mass in older adults



A decline in functional mobility, loss of muscle strength and an increase in body fats are often associated with ageing. This trend could potentially be reversed by way of an innovative magnetic muscle therapy pioneered by researchers from the National University of Singapore (NUS).

In a recent community study conducted in Singapore involving 101 participants aged between 38 to 91 years old, weekly exposure to very low levels of proprietary pulsed electromagnetic field (PEMF), using the BIXEPS device invented by NUS researchers in 2019, is associated with significant improvements in mobility and body composition after 12 weeks, particularly in older persons. Participants also reported reduced perception of pain after 3 months of magnetic muscle therapy.

The community trial was carried out jointly by researchers from the NUS Institute for Health Innovation & Technology (iHealthtech), NUS startup QuantumTX, and Healthy Longevity Translational Research Programme under the NUS Yong Loo Lin School of Medicine.

The BIXEPS device targets the muscles in a user's leg with a specific magnetic signature and creates metabolic activity in the cells similar to when a person exercises.

Real-world pilot data from existing community programmes have also shown promise of better controlled HbA1c - the prevalent marker for diabetes progression - after starting on weekly BIXEPS sessions. The research team is currently working with the Singapore General Hospital to conduct a clinical trial to further investigate the possible therapeutic possibility for PEMF-based therapies to manage diabetes progression.