
THE FUTURE OF REHABILITATION MEDICINE – PRECISION REHABILITATION: MOBILE APPLICATIONS / APPS AND SENSOR TECHNOLOGIES

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The author highlights the transformative role of mobile applications and sensor technologies in advancing precision rehabilitation. These digital tools offer continuous, real-world insights into patients' functional status, supporting adaptive and personalized interventions throughout the rehabilitation process (Antonini et al., 2025). Mobile health (mHealth) platforms and wearable sensors capture valuable data on physical activity, gait patterns, cardiovascular performance, and adherence to prescribed exercises (Ross et al., 2022). This data can be analysed in real time to adjust therapeutic plans, increasing clinical responsiveness and patient engagement. More importantly, these technologies shift the rehabilitation model from episodic clinic visits to continuous, data-driven care anchored in the patient's daily life (Dobkin & Dorsch, 2011). By integrating digital monitoring with PROMs and ICF metrics, clinicians gain a comprehensive view of functioning and participation. Algorithms can flag deviations from expected recovery trajectories, prompting timely interventions (Lin et al., 2024). Moreover, remote monitoring enables care delivery in rural or underserved regions, improving accessibility and equity (Antonini et al., 2025). The author advocates for the ethical deployment of these technologies, emphasizing data privacy, user-friendliness, and digital literacy. Additionally, she calls for standardized validation protocols to ensure that digital assessments are clinically meaningful and interoperable with existing health systems (Ross et al., 2022). Incorporating sensor data into rehabilitation aligns with the core goals of precision rehabilitation: delivering the right intervention to the right person at the right time, grounded in objective functional data. It empowers patients, enhances clinical decision-making, and represents a crucial step toward sustainable, high-impact rehabilitation (Dobkin & Dorsch, 2011).

Keywords: Precision-Rehabilitation, Mobile-Apps, Sensor Technologies, PRM

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