Appendix 1. All articles included in the scoping review

First author	Year of publication	Title	Field	Country	Study design	Publication type	Nb of participants	Technology used	Purpose of technology use	Use of AI	Purpose of AI use
Woelfel. J	2018	Precision Physical Therapy: Exercise, the Epigenome, and the Heritability of Environmentally Modified Traits	Physical Rehabilitation	USA	Editorial paper	Perspective paper	None	N/A	N/A	No	N/A
Magnusson . D.M.	2021	Strengthening Population Health Perspectives in Physical Therapist Practice Using Epigenetics	Physical Rehabilitation	USA	Editorial paper	Perspective paper	None	N/A	N/A	No	N/A
Severin R.	2022	Precision Medicine and Physical Therapy: A Healthy Living Medicine Approach for the Next Century	Physical Rehabilitation	USA	Editorial paper	Perspective paper	None	N/A	N/A	No	N/A
Jette A.	2022	PTJ's Editor's Choice.	Physical Rehabilitation	Not stated	Editorial paper	Editorial for special issues	None	N/A	N/A	No	N/A
Chang. C-H.	2017	Development of the Ability Quotient (AQ): An Innovative Assessment System for Precision Rehabilitation Outcomes.	Clinician Reported Outcomes	USA	Cohort study	Conference abstract	5035	Electronic data collection	Database	No	N/A
Galasso. S	2023	Predicting physical activity levels from kinematic gait data using machine learning techniques	Gait abilities	Italy	Cross-sectional study	Research article	37	Wearable	Movement analysis	Yes	Making diagnosis and predictions

Author	Year	Title	Rehabilitation Area	Country	Study Design	Publication Type	Sample Size	Technology	Application		
Gmez-Portes C.	2020	Home Rehabilitation Based on Gamification and Serious Games for Young People: A Systematic Mapping Study	Home Rehabilitation	Spain	Systematic mapping study	Research article	None	VR, Telehealth	Home based rehabilitation	No	N/A
French. M A	2022	Response to Letter to the Editor Regarding "Precision Rehabilitation: Optimizing Function, Adding Value to Health Care"	Physical Rehabilitation	USA	Editorial paper	Response to letter to editor	None	N/A	N/A	No	N/A
Chen N.	2018	Clinical remission of myopathy with MYH2 deficiency after precision medicine-developed rehabilitation: a case report	Physical Rehabilitation	China	Case report	Research article	1	Whole-exome sequencing	Genetic testing	No	N/A
Ernesto. C	2022	Wearable Technology and Machine Learning to Monitor Upper-Limb Use in Brain Injury Survivors	Upper-limb Motor Function Rehabilitation	USA	Cross-sectional study	Conference proceeding	37	Wearable	Movement analysis	Yes	Making diagnosis and predictions
Brezany. P	2018	Towards Precision Brain Disorder Rehabilitation	Brain Disorder Rehabilitation	Austria and Czech Republic	Descriptive paper	Conference proceeding	None	WiiFit, wearable	Monitoring	No	N/A

Author	Year	Title	Rehabilitation Area	Country	Study Type	Publication Type	Sample Size	Technology	Application	Data-driven	Purpose
Bonato P.	2021	Keynote: Digital Health Technologies and Their Role in the Development of Precision Rehabilitation Interventions	Technologies for movement and physiological data	USA	Editorial paper	Conference proceeding	None	N/A	N/A	No	N/A
Luo. Z	2023	Development of a Data-driven Self-adaptive Upper Limb Virtual Rehabilitation System for Post Stroke Elderly	Post-stroke Rehabilitation	China and Malaysia	Case control study	Conference proceeding	11	VR, wearable	Movement analysis	Yes	Monitoring and enhancing human perception; Applying treatment dynamically
Dario P.	2017	An integrated scenario unifying precision orthopaedic surgery and precision orthopaedic	Orthopaedic Rehabilitation	Italy	Not stated	Conference proceeding	None	N/A	N/A	No	N/A
Rushton. A.	2017	An innovative approach to understanding mechanisms in the transition from acute to chronic pain in a musculoskeletal trauma	Pain Rehabilitation	Not stated	Pronostic study	Conference abstract	None	N/A	N/A	No	N/A
Masson. A	2019	Understanding the lived experiences of the patient journey following lumbar spinal fusion surgery using weekly patient diaries	Back Surgery Rehabilitation	UK	Cross-sectional study	Conference abstract	8	N/A	N/A	No	N/A

Author	Year	Title	Application	Country	Study type	Publication type	Sample	Technology	Use		
Lelis. A	2020	Matching precision medicine with precision rehabilitation: A framework for clinical decision making in oncology rehabilitation	Oncology Rehabilitation	Not stated	Framework	Conference abstract	None	N/A	N/A	No	N/A
Bhattacharjee A.	2023	A Handheld Quantifiable Soft Tissue Manipulation Device for Tracking Real-Time Dispersive Force-Motion Patterns to Characterize Manual Therapy Treatment	Low Back Pain Rehabilitation	USA	Case control study	Research article	1	Quantifiable Soft Tissue Manipulation (QSTM)	Monitoring	No	N/A
Raghavan. P	2018	Dose-response relationship during motor learning with bimanual-to-unimanual training	Upper-limb Motor Function Rehabilitation	USA	Cohort study	Conference abstract	20	Bimanual Arm Trainer	Monitoring	No	N/A
Salzmann L	2023	Neurofeedback for precision rehabilitation of Parkinson's patients	Parkinson Rehabilitation	Switzer-land	Pilot study	Conference abstract	8	Wearable	Realtime	No	N/A
Rosenberg MC	2022	Fastest may not be the best: differential and individual-specific immediate effects of gait speed on biomechanical variables	Post-stroke Rehabilitation	USA	Cross-sectional study	Preprint	14	Instrumented treadmill, Mocap system	Movement analysis	No	N/A
Iverson. G	2019	Network Analysis and Precision Rehabilitation for the Post-concussion Syndrome.	Post-concussion Rehabilitation	USA	Narrative review	Research article	None	N/A	N/A	No	N/A

Author	Year	Title	Rehabilitation Area	Country	Study Design	Article Type	Sample Size				
O'Donnell, DE	2019	Chronic respiratory diseases: The dawn of precision rehabilitation.	Chronic Respiratory Diseases (CRD) Rehabilitation	Canada	Editorial paper	Editorial paper	None	N/A	N/A	No	N/A
Wagner A.	2017	TBI Rehabilomics Research: an Exemplar of a Biomarker-Based Approach to Precision Care for Populations with Disability.	Traumatic Brain Injury Rehabilitation	USA	Narrative review	Research article	None	N/A	N/A	No	N/A
Rushton A	2018	Patient journey following lumbar spinal fusion surgery (LSFS): protocol for a multicentre qualitative analysis of the patient rehabilitation experience (FuJourn).	Back Surgery Rehabilitation	UK	Interpretive phenomenological analysis	Research article	40	N/A	N/A	No	N/A
Rushton AB	2018	Development of a screening tool to predict the risk of chronic pain and disability following musculoskeletal trauma: protocol for a prospective observational study in	Chronic Pain Rehabilitation	UK	Prospective observational study	Research article	None	N/A	N/A	No	N/A

Author	Year	Title	Field	Country	Study design	Article type	Sample	Device	Application		
Wagner. AK	2019	TBI Rehabilomics Research: Conceptualizing a humoral triad for designing effective rehabilitation interventions.	Traumatic Brain Injury Rehabilitation	USA	Framework	Research article	None	N/A	N/A	No	N/A
Hancock. NJ	2020	Identification of neuromuscular targets for restoration of walking ability after stroke: Precursor to precision rehabilitation.	Post-stroke Rehabilitation	UK	Prospective correlational study	Research article	28	Upright Pedalling device (U-PED)	Monitoring	No	N/A
Lungo UG	2020	Physical therapy and precision rehabilitation in shoulder rotator cuff disease.	Orthopaedic Rehabilitation	Italy	Systematic review	Research article	None	N/A	N/A	No	N/A
Lee. S	2021	Predicting and Monitoring Upper-Limb Rehabilitation Outcomes Using Clinical and Wearable Sensor Data in Brain	Post-stroke Rehabilitation and Traumatic Brain Injury Rehabilitation	USA	Cross-sectional study	Research article	44	Wearable	Movement analysis	No	N/A
Trabacca A.	2021	Moving towards precision neurological rehabilitation: a mandatory path to follow in the era of precision neurology.	Neurological rehabilitation	Italy	Editorial paper	Letter to the editor	None		Training modalities	No	N/A

Author	Year	Title	Field	Country	Study type	Article type	Sample	Device	Application		
Shields. R K	2021	Precision Rehabilitation: How Lifelong Healthy Behaviors Modulate Biology, Determine Health, and Affect	Physical Rehabilitation	USA	Editorial paper	Editorial for special issues	None	N/A	N/A	No	N/A
Yu. B	2022	The Effects of the Biceps Brachii and Brachioradialis on Elbow Flexor Muscle Strength and Spasticity in Stroke Patients.	Post-stroke Rehabilitation	China	Cross-sectional study	Research article	15	Wearable	Realtime	No	N/A
van der Veen. R	2022	Measurement Feedback System for Intensive Neurorehabilitation after Severe Acquired Brain Injury.	Acquired brain surgery (ABI) Rehabilitation	Netherlands	Framework	Research article	124	N/A	N/A	No	N/A
Brady M.C.	2022	Precision rehabilitation for aphasia by patient age, sex, aphasia severity, and time since stroke? A prespecified, systematic review-based, individual participant data, network, subgroup	Aphasia Rehabilitation	UK	Meta-analysis	Research article	959	N/A	N/A	No	N/A
O'Keeffe. R	2022	Nonlinear functional muscle network based on information theory tracks sensorimotor integration post stroke.	Post-stroke Rehabilitation	USA	Cross-sectional study	Research article	32	Wearable	Movement analysis	No	N/A

Author	Year	Title	Rehabilitation type	Country	Study design	Article type	Sample size	Technology	Application		
Cotton. J	2022	Precision Rehabilitation: Optimizing Function, Adding Value to Health	Physical Rehabilitation	USA	Editorial paper	Editorial paper	None	N/A	N/A	No	N/A
Ditton. E	2020	Improving Patient Outcomes Following Total Knee Arthroplasty: Identifying Rehabilitation Pathways Based on Modifiable Psychological Risk and Resilience Factors.	Orthopaedic Rehabilitation	Australia and Singapore	Conceptual analysis	Research article	None	N/A	N/A	Yes	Making diagnosis and predictions
Adans-Dester. C	2020	Enabling precision rehabilitation interventions using wearable sensors and machine learning to track motor recovery.	Upper-limb Motor Function Rehabilitation	USA	Longitudinal study	Research article	37	Wearable	Movement analysis	Yes	Making diagnosis and predictions
Moon. S	2021	Proof-of-Concept of the Virtual Reality Comprehensive Balance Assessment and Training for Sensory Organization of Dynamic Postural Control.	Postural Control Rehabilitation	USA	proof-of-concept study	Research article	23	VR, wearable	Movement analysis	No	N/A
Bonnechère B.	2022	Integrating Rehabilomics into the Multi-Omics Approach in the Management of Multiple Sclerosis: The Way for Precision Medicine?.	Multiple Sclerosis Rehabilitation	Belgium	Editorial paper	Editorial paper	None	N/A	N/A	No	N/A

Author	Year	Title	Rehabilitation type	Country	Study design	Article type	Sample size	Technology	Category	AI use	AI application
French. M A	2023	A Learning Health System Infrastructure for Precision Rehabilitation After Stroke.	Post-stroke Rehabilitation	USA	Case report	Research article	Not stated	Electronic Health Record	Learning Health System	No	N/A
Chen. Y-W	2023	Predicting patient-reported outcome of activities of daily living in stroke rehabilitation: a machine learning study.	Post-stroke Rehabilitation	Taiwan	Retrospective analysis	Research article	128	Robotic assisted training	Training modalities	Yes	Making diagnosis and predictions; Classifiying
Silverberg. N	2023	Management of Psychological Complications Following Mild Traumatic Brain Injury.	Traumatic Brain Injury Rehabilitation	Canada	Narrative review	Research article	None	N/A	N/A	No	N/A
Lin. D	2023	Stepping Closer to Precision	Post-stroke Rehabilitation	USA	Editorial paper	Opinion paper	None	N/A	N/A	No	N/A
Suzuki. M	2023	Baseline Variability Affects N-of-1 Intervention Effect: Simulation and Field Studies.	Physical Rehabilitation	Japan	Simulation study	Research article	17	N/A	N/A	No	N/A
Levac. D	2022	Individual and contextual factors influencing children's effort in pediatric rehabilitation interventions.	Physical Rehabilitation	Canada	Narrative review	Research article	None	N/A	N/A	No	N/A

Yuan. F	2023	Analysis on effect and influencing factors of precision rehabilitation therapy on scales of ABC, CARS, CHAT and CABS in children with autism spectrum disorder.	Autism spectrum disorder Rehabilitation	China	Editorial paper	Letter to the editor	50	N/A	N/A	No	N/A
Garg. R	2022	Wearable High-Density MXene-Bioelectronics for Neuromuscular Diagnostics, Rehabilitation, and Assistive Technologies.	Neuromuscular Rehabilitation	USA and Italy	Cross-sectional study	Research article	10	Wearable	Monitoring	Yes	Making diagnosis and predictions