

Supplemental Table Mobile mobility outcomes

Therapeutic Area	Technology	Position of device	Epochs	Study design	Type of clinical study	Other mobile outcomes	Other standard outcome assessment	Use of mobile outcomes	Objectives	Source
Cardiology (Stroke)	Inertial sensor (ActiGraph GT3X+ accelerometer, SenseWear Armband, activPAL3)	Leg or Foot (Nonparetic Thigh)	Not specified	Observational (Case control)	Quality of life	Physical activity (PerFO)	Cardiometabolic and anthropometric measures (ClinRO) Cardiac related endpoints (ClinRO) Mobility related endpoints (ClinRO and PRO)	Exploratory endpoint	To explore the physical, cognitive, and psychological factors associated with daily sitting time and physical activity in people with stroke.	English 2016c [1]
Geriatrics (Fall Risk)	Inertial sensor (activPAL)	Leg or Foot (Thigh)	Not specified	Observational (Cohort study)	Epidemiological	Physical activity (PerFO)	Mobility (PRO, ClinRO, PerFO) General health history (PRO)	Exploratory endpoint	To investigate the relationship between PA and two measures of fall incidence in an elderly population using person-years as well as hours walked as denominators and to compare these two approaches.	Klenk 2015 [2]
Neurology (Parkinson's Disease)	Inertial sensor (DynaPort Hybrid system)	Base of the Spine	60 seconds	Observational (Cohort study)	Screening	Physical activity (PerFO)	Mobility (ClinRO, PRO, PerFO) Psychosocial (ClinRO, PRO)	Primary endpoint	To assess the gait pattern of patients who suffer from freezing (i.e., freezers) during routine, daily living community and at-home ambulation and to determine the association between the gait measures and FOG severity and its impact on daily function.	Weiss 2014 [3]
Neurology (Parkinson's Disease)	Inertial sensor (wearable CuPiD system), Pressure sensor (PKMAS walkways)	Leg or Foot (Ankle, Foot), Not Attached to the Body (On the floor)	100 Hz	Interventional (RCT)	Quality of life	Physical activity (PerFO)	Adherence (PRO) Mobility (PerFO) Physical (PerFO) Psychosocial (ClinRO)	Primary endpoint	To test the feasibility of training with the CuPiD system in the home environment, and to discover the differential effects of CuPiD training including biofeedback from a wearable device versus conventional home-based gait intervention on gait, balance and HR-QoL in PD.	Ginis 2016 [4]

Orthopedics (Hip Fracture)	Inertial sensor (activPAL)	Leg or Foot (Nonparetic Thigh)	Not specified	Interventional (RCT)	Quality of life	Physical activity (PerfO)	Mobility (ClinRO, PerfO) Pain (ClinRO, PRO)	Secondary endpoint	To assess if daily physical behavior as indicated by time spent in upright positions (standing and walking) the fourth day after surgery differed between hip fracture patients treated in a geriatric ward receiving comprehensive geriatric assessment compared with hip fracture patients receiving conventional treatment in an orthopedic ward. To assess differences in number of upright events during the day and physical function in terms of need for help during ambulation and lower limb functions.	Taraldsen 2014 [5]
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PerfO = Performance Outcome; PRO = Patient Reported Outcome; ClinRO = Clinician Reported Outcome

References

1. English C, Healy GN, Coates A, Lewis LK, Olds T, Bernhardt J. Sitting time and physical activity after stroke: physical ability is only part of the story. Topics in stroke rehabilitation. 2016;23(1):36-42. Epub 2015/08/11. doi: 10.1179/1945511915y.0000000009. PubMed PMID: 26257146.
2. Klenk J, Kerse N, Rapp K, Nikolaus T, Becker C, Rothenbacher D, et al. Physical Activity and Different Concepts of Fall Risk Estimation in Older People--Results of the ActiFE-Ulm Study. PloS one. 2015;10(6):e0129098. Epub 2015/06/10. doi: 10.1371/journal.pone.0129098. PubMed PMID: 26058056; PubMed Central PMCID: PMC4461251.
3. Weiss A, Herman T, Giladi N, Hausdorff JM. Objective assessment of fall risk in Parkinson's disease using a body-fixed sensor worn for 3 days. PloS one. 2014;9(5):e96675. Epub 2014/05/08. doi: 10.1371/journal.pone.0096675. PubMed PMID: 24801889; PubMed Central PMCID: PMC4011791.
4. Ginis P, Nieuwboer A, Dorfman M, Ferrari A, Gazit E, Canning CG, et al. Feasibility and effects of home-based smartphone-delivered automated feedback training for gait in people with Parkinson's disease: A pilot randomized controlled trial. Parkinsonism & related disorders. 2016;22:28-34. Epub 2016/01/19. doi: 10.1016/j.parkreldis.2015.11.004. PubMed PMID: 26777408.
5. Taraldsen K, Sletvold O, Thingstad P, Saltvedt I, Granat MH, Lydersen S, et al. Physical behavior and function early after hip fracture surgery in patients receiving comprehensive geriatric care or orthopedic care--a randomized controlled trial. The journals of gerontology Series A, Biological sciences and medical sciences. 2014;69(3):338-45. Epub 2013/08/02. doi: 10.1093/gerona/glt097. PubMed PMID: 23902933.