National Institute for Health and Care Excellence

Final

Rehabilitation for chronic neurological disorders including acquired brain injury

[D] Evidence review for personal care and activities of daily living

NICE guideline NG252

Evidence review underpinning recommendations 1.8.22, 1.8.24, 1.13.3, 1.16.6, 1.16.8, 1.20.1 to 1.20.13, 1.21.1 to 1.21.9 and a recommendation for research in the NICE guideline

October 2025

Final

This evidence review was developed by NICE

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Review question

What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Introduction

Due to a variety of reasons, more people of all ages are living longer lives despite having the diagnosis of a chronic neurological disorder. However, survival is not the most important outcome to many. Quality of life and maintaining independence is frequently described by people with a chronic neurological disorder as a priority, showing that maintaining personal independence in activities of daily living is valued by this population.

This review aims to examine interventions that support participation in activities of daily living, and identify evidence as a basis for recommendations, including signposting individuals and professionals to preferred options.

Summary of the protocol

See Table 1 for a summary of the Population, Intervention, Comparison and Outcome (PICO) characteristics of this review.

Table 1: Summary of the protocol (PICO table)

Population	Adults and children with rehabilitation needs due to the following chronic neurological disorders: • Acquired brain injury • Acquired spinal cord injury • Acquired peripheral nerve disorders • Progressive neurological diseases • Functional neurological disorders

Intervention	• Interventions to develop skills for adaptive functioning or functional task training
	  ○ Overall approaches
	  ○ Interventions for personal activities of daily living (PADL)
	  ○ Interventions for extended activities of daily living (EADL)
	  ○ Interventions for community living skills
	  ○ Interventions for functional mobility (both indoor and outdoor)
	• Interventions, equipment, and devices to support functioning and modify the environment
	  ○ Technological interventions
	  ○ Postural/24-hour positioning management systems (including sleep systems)
	  ○ Wearable technology
	  ○ Robotic gait orthoses or exoskeletons
	  ○ Interventions for upper limb function
	• Interventions for sustaining or improving capability in eating, drinking and swallowing
	  ○ Diet and fluid modification: thickeners
	  ○ Swallowing exercises, manoeuvres and programmes and swallow re-training by Speech and Language Therapists

	○ Neuromuscular electrical stimulation or pharyngeal stimulation, transcranial direct current or magnetic stimulation ○ Enteral tube feeding.
Comparison	Interventions compared with others in the same group or: • Placebo (placebo or sham) • Control (no intervention, waitlist, standard rehabilitation care alone, or 'usual care') • The same intervention (as listed under 'intervention') but varied in terms of: ○ Frequency ○ Intensity ○ Timing ○ Setting
Outcome	**Critical** • Functional independence (assessed using validated, global measures such as Assessment of Motor and Process Skills [AMPS]; Barthel ADL Index; Canadian Occupational Performance Measure [COPM]; Community Integration Questionnaire; FIM Functional Independence Measure; FIM+FAM; Pedi-Cat; Supervision Rating Scale; Sydney Psychosocial Reintegration Scale; Therapy Outcome Measure [TOM]) • Quality of life (including physical and mental health-related, and social care-related) (assessed using validated, global measures, such as the Brain Injury Community Rehabilitation Outcome Scales; EQ5D-3L; EQ5D-5L; Fatigue Severity Scale [FSS]; Mayo-Portland Adaptability Inventory-4; Multiple Sclerosis Impact Scale [MSIS-29 v2]; NeuroQOL; PedsQL; QUOLIBRI; SF-36; WHOQOL-100; WHOQOL-BREF; ASCOT; ICECAP-A]) Personal goal attainment (measured using validated tools such as the Goal Attainment Scale [GAS]) • Swallowing related quality of life (measured using validated tools such Dysphagia Disorder Survey [DDS]; Dysphagia outcome and severity scale [DOSS]; Dysphagia Severity Rating Scale [DSRS]; Eating and drinking classification scale [EDACS]; Eating Assessment Tool-10 [EAT-10]; Functional Oral Intake Scale [FOIS]; Malnutrition Universal Screening Tool; MD Anderson Dysphagia Inventory [MDADI]; Neonatal Oral-Motor Assessment Scale [NOMAS]; Oral Health Assessment Tool; Penetration-Aspiration Scale; Swallow Disturbance Questionnaire [SDQ]; Test of masticating and swallowing solids [TOMASS]; Therapy Outcome Measures – Dysphagia [TOMs]) **Important** • Pain (measured using validated tools such as the Visual Analogue Scale [VAS] or Numerical Rating Scale [NPRS]. In addition, measures of pain as a biopsychosocial construct include Brief Pain Inventory [BPI], Numerical Pain Rating Scale [NPRS]; Pain Catastrophising Scale [PCS]).Carer quality of life (using a validated, global measure such as the Adult Social Care Outcomes toolkit for Carers [ASCOT – Carers] and the Carer Experience Scale [CES]; AC QoL Adult Carers Quality of Life; Caregiver Burden Scale/ Carer Strain Index; PedsQL-fim)

ADL: activities of daily living; ASCOT: adult social care outcomes toolkit; EQ-5D-3L: EuroQol 5-dimension 3 levels; EQ-5D-5L: EuroQol 5-dimension 5-levels; FIM+FAM: functional independence measure and functional assessment measure; ICECAP-A: investigating choice experiences capability measure for adults; NeuroQOL: quality of life in neurological disorders; PedsQL: paediatric quality of life; Pedi-Cat: pediatric evaluation of disability inventory computer adaptive test; PedsQL-fim: paediatric quality of life family impact module; SF-36: 36-item short form survey; QUOLIBRI: quality of life after brain injury; WHOQOL-BREF: World Health Organisation quality of life brief format; WHOQOL-100: World Health Organisation quality of life 100 questions

For further details see the review protocol in appendix A.

Methods and process

This evidence review was developed using the methods and process described in Developing NICE guidelines: the manual. Methods specific to this review question are described in the review protocol in appendix A and the methods document (supplement 1).

Declarations of interest were recorded according to NICE's conflicts of interest policy.

Effectiveness evidence

Included studies

Nineteen studies were included for this review and were all randomised controlled trials (RCTs) (Clarke 2016, Claus 2021, Cubo 2017, De Joode 2013, Del Pino 2023, Estival 2021, Herrmann 2022, Jiménez-Barrios 2023, Kos 2016, Lannin 2014, Latella 2022, Miller 2016, Ownsworth 2017, Patt 2023, Quinn 2014, Renfrew 2019, Sturkenboom 2014, Veenhuizen 2019, Volpe 2017).

The included studies are summarised in Table 2.

Four studies were conducted in The Netherlands (De Joode 2013, Kos 2016, Sturkenboom 2014, Veenhuizen 2019), 4 were conducted in the UK (Clarke 2016, Miller 2016, Quinn 2014, Renfrew 2019), 3 were conducted in Italy (Del Pino 2023, Latella 2022, Volpe 2017), 2 were conducted in Australia (Lannin 2014, Ownsworth 2017), 2 were conducted in Spain (Cubo 2017, Jiménez-Barrios 2023), 1 was conducted in France (Estival 2021), 2 were conducted in Germany (Claus 2021, Herrmann 2022), and 1 was conducted in Switzerland (Patt 2023).

Fifteen studies investigated approaches for improving or maintaining independence in activities of daily living for adults with progressive neurological diseases (Clarke 2016, Cubo 2017, Del Pino 2023, Estival 2021, Herrmann 2022, Jiménez-Barrios 2023, Kos 2016, Latella 2022, Miller 2016, Patt 2023, Quinn 2014, Renfrew 2019, Sturkenboom 2014, Veenhuizen 2019, Volpe 2017), 3 studies investigated approaches for improving or maintaining independence in activities of daily living for adults with acquired brain injury (De Joode 2013, Lannin 2014, Ownsworth 2017), and 1 study investigated approaches for sustaining or improving capability in eating, drinking and swallowing (Claus 2021).

There were no trials reporting data for approaches to improve or sustain independence in activities of daily living for children and young people with chronic neurological disorders. Additionally, none of the included studies reported data from adults with an acquired spinal cord injury, acquired peripheral nerve disorder, or a functional neurological disorder.

Data for the following outcomes were identified through analysis of the included studies:

- Functional independence
- Quality of life
- Swallowing related quality of life
- Personal goal attainment
- Carer quality of life

Only 1 meta-analysis was conducted on the data due to heterogeneity across interventions, time points and outcome measurements between included studies.

See the literature search strategy in appendix B and study selection flow chart in appendix C.

Excluded studies

Studies not included in this review are listed, and reasons for their exclusion are provided in appendix J.

Summary of included studies

Summaries of the studies that were included in this review are presented in Table 2.

Table 2: Summary of included studies

Study	Population	Intervention	Comparison	Outcomes
Clarke 2016 RCT UK	N=762 adults with Parkinson's disease • Combined physiotherapy and occupational therapy: n=381 • Waitlist control: n=381 Age in years [Mean (SD)]: • Combined physiotherapy and occupational therapy: 70 (9.1) • Waitlist control: 70 (9.3) Sex (M/F): • Combined physiotherapy and occupational therapy: n=240/n=141 • Waitlist control: n=258/n=123 Chronic neurological disorder category: Progressive neurological diseases.	Combined physiotherapy and occupational therapy. Participants completed an initial assessment with a physiotherapist and an occupational therapist, which informed a personalised therapy programme based on individual requirements and challenges. • Mean sessions per participant: 4 • Mean time per session: 58 minutes • Mean duration: 8 weeks • Mean total dose per participant: 263-minutes Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Interventions for personal activities of daily living	Waitlist control Note: Participants were allowed to access rehabilitation services outside of the trial.	• Functional independence • Quality of life (including physical and mental health-related, and social care-related) • Carer quality of life
Claus 2021 RCT Germany	N=50 adults with Parkinson's Disease • Expiratory muscle strength training: n=25 • Sham expiratory muscle strength training: n=25 Age in years [Mean (SD)]: • Expiratory muscle strength training: 67.3 (9.5)	Expiratory muscle strength training (EMST) All participants underwent a dysphagia assessment at their baseline visit. At the initial study visit, all participants (both active and control) were taught the EMST training protocol. During the study	Sham expiratory muscle strength training (EMST) The sham device was identical to the EMST device except the pressure release valve was made to be nonfunctional by removing the pressure meter. Therefore, it was providing little to no	• Swallowing related quality of life

Study	Population	Intervention	Comparison	Outcomes
	• Sham expiratory muscle strength training: 67.1 (7.7) Sex (n, M/F): • Expiratory muscle strength training: n=19/n=5 • Sham expiratory muscle strength training: n=18/n=3 Chronic neurological disorder category: Progressive neurological diseases.	period, all participants completed a training logbook, and completed a phone-based assessment during the intervention. Participants completed 5 sets of 5 repetitions of the exercise per training episode, 5 days a week. Protocol intervention group: Interventions for sustaining or improving capability in eating, drinking and swallowing: swallowing exercises, manoeuvres and programmes and swallow retraining by Speech and Language Therapists	physiological load to the targeted muscles.	
Cubo 2017 RCT Spain	N=40 adults with Parkinson's disease • Home-based motor monitoring plus standard in-office management: n=20 • Standard in-office management: n=20 Age in years [Mean (SD)][1]: • Home-based motor monitoring plus standard in-office management: 66.44 (7.09) • Standard in-office management: 66.05 (9.76) Sex (M/F)[1]: • Home-based motor monitoring plus standard in-office management: n=10/n=8	Home-based motor monitoring plus standard in-office management Motor symptoms were monitored at home 1 day per month using Kinesia™, a wireless based motion sensor technology. Participants also received standard in-office management as per comparison group. Note: All participants were able to receive telephone and email support from nurses or treating physicians. Protocol Intervention group: Interventions,	Standard in-office management No further details reported. Note: All participants were able to receive telephone and email support from nurses or treating physicians.	• Functional independence • Carer quality of life

Study	Population	Intervention	Comparison	Outcomes
	• Standard in-office management: n=8/n=12 Chronic neurological disorder category: Progressive neurological diseases. [1]Only reported for 18 participants in intervention group.	equipment, and devices to support functioning and modify the environment: Technological interventions		
De Joode 2013 RCT The Netherlands	N=40 adults with acquired brain injury • Customised personal digital assistant: n=23 • Pencil and paper aid: n=17 Age in years [Mean (SD)][2]: • Customised personal digital assistant: 42.2 (15.4) • Pencil and paper aid: 39.4 (15.6) Sex (M/F) [2]: • Customised personal digital assistant: n=14/n=7 • Pencil and paper aid: n=10/n=3 Chronic neurological disorder category: Acquired brain injury. [2]Only reported for 21 participants in intervention group and 13 in control group. Protocol population did not include carers. However, carers were included in the study and carer quality of life is a protocol outcome so carer characteristics are presented here for context.	Customised personal digital assistant 16 hours using Planning and Executive Assistant and Trainer (PEAT) software, installed on a personalised digital assistant. The programme contains 4 modules: cue cards; diary; notes section; names section. Initial sessions concentrated on training using the digital assistant, with remaining sessions being tailored to individual needs and requirements. Session intensity ranged from 2 per week to 2 per month, or 30-60-minutes per week. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Interventions for community living skills	Pencil and paper aid 16 hours using pencil and paper aids, usually memory diaries. Initial sessions concentrated on training using the diary (what to record, how to structure days and weeks, and how to integrate with daily life). Remaining sessions were tailored to individual needs and requirements. Note: Study reports this as usual care in study clinics.	• Functional independence • Quality of life (including physical and mental health-related, and social care-related) • Personal goal attainment • Carer quality of life

Study	Population	Intervention	Comparison	Outcomes
	N=25 carers of people with acquired brain injury • Customised personal digital assistant: n=18 • Pencil and paper aid: n=7 Age in years [Mean (SD)] of patient group: Not reported Sex (M/F) of patient group: Not reported			
Del Pino 2023 RCT Italy	N=20 adults with Parkinson's disease • Virtual coach and telerehabilitation with daily life monitoring system: n=10 • Standard clinical practice: n=10 Age in years [Mean (SD)]: • Virtual coach and telerehabilitation with daily life monitoring system: 64.5 (7.9) • Standard clinical practice: 69.1 (3.5) Sex (M/F): • Virtual coach and telerehabilitation with daily life monitoring system: n=7/n=3 • Standard clinical practice: n=7/n=3 Chronic neurological disorder category: Progressive neurological disease.	Virtual coach and telerehabilitation with daily life monitoring system 4x 30-minutes (average) motor and cognitive sessions per week. Exact games, duration of exercises, and level of difficulty were personalised for each participant and their current state. Cognitive and motor telerehabilitation included a range of exercises, from those targeting attention to those targeting dexterity. A virtual coach avatar guided participants through the games, in response to the rehabilitation plan uploaded by healthcare professionals. Education, active lifestyle coaching, and falls prevention modules were also included. Participants were monotired virtually throughout the programme.	Standard clinical practice (without traditional rehabilitation element) Received standard clinical health standard throughout study period but no rehabilitation.	• Functional independence

Study	Population	Intervention	Comparison	Outcomes
		Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment: Technological interventions		
Estival 2021 RCT France	N=60 adults with Prader-Willi syndrome • Metacognitive strategy training of planning abilities with ETAPP programme: n=30 • Usual care: n=30 Age in years [Mean (SD)][3]: • Metacognitive strategy training of planning abilities with ETAPP programme: 36.00 (6.63) • Usual care: 31.42 (9.06) Sex (M/F) [3]: • Metacognitive strategy training of planning abilities with ETAPP programme: n=11/n=16 • Usual care: n=10/n=16 Chronic neurological disorder category: Progressive neurological diseases. [3]Only reported for 27 participants in intervention group and 26 in control group.	Metacognitive strategy training of planning abilities with ETAPP programme 6x 1-hour sessions, delivered in small groups. The initial session focused on increasing people's awareness of planning difficulties in their everyday life, and subsequent sessions introduced a new task to practice. Included elements of Goal Management Training, Attention and Problem Solving, self-regulation scripts, and problem-orientation notions. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Interventions for community living skills	Usual care Session content was determined by occupational therapists and focused on motor training instead of actional planning. Examples included getting dressed, morning routine, and getting up after a fall.	• Personal goal attainment
Herrmann 2022 RCT Germany	N=20 adults with amyotrophic lateral sclerosis • Pharyngeal electrical stimulation and standard logopaedic therapy: n=10	Pharyngeal electrical stimulation plus standard logopaedic therapy Pharyngeal electrical stimulation	Standard logopaedic therapy 3x 45-minutes sessions on consecutive days. Included restitutional	• Functional independence • Swallowing related quality of life

Study	Population	Intervention	Comparison	Outcomes
	• Standard logopaedic therapy: n=10 Age in years [Mean (SD) not reported] [Median (IQR)]: • Pharyngeal electrical stimulation plus standard logopaedic therapy: 76.0 (66.3-79.0) • Standard logopaedic therapy: 57.5 (50.3-69.3) Sex (M/F): • Pharyngeal electrical stimulation plus standard logopaedic therapy: n=5/n=5 • Standard logopaedic therapy: n=3/n=7 Chronic neurological disorder category: Progressive neurological diseases.	performed using Phagenyx®, including transnasal catheter with pharyngeal stimulation electrodes. 3x 10-minute applications (frequency 5 Hz, duration 200 µs, intensity 1 to 50 mA) on consecutive days. Participants also received standard logopaedic therapy as per comparison group. Protocol intervention group: Interventions for sustaining or improving capability in eating, drinking and swallowing: Neuromuscular electrical stimulation or pharyngeal stimulation, transcranial direct current or magnetic stimulation	procedures to train sensorimotor perception and economic use of remaining functions; compensatory procedures such as change in posture or specific swallowing techniques; and adaptive procedures to eating and drinking habits.	
Jiménez-Barrios 2023 RCT Spain	N=40 adults with Parkinson's disease • Dynamic elastomeric fabric orthosis for upper limb: n=20 • Waitlist control: n=20 Age in years [Mean (SD)]: • Dynamic elastomeric fabric orthosis for upper limb: 72.18 (5.58) • Waitlist control: 69.55 (12.31) Sex (M/F): • Dynamic elastomeric fabric orthosis for upper limb: n=15/n=7	Dynamic elastomeric fabric orthosis for upper limb 2 months of wearing dynamic elastomeric fabric orthoses in most affected upper limb. Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment: Interventions for upper limb function	Waitlist control Participants instructed to live life as normal and received intervention as per intervention group when study period was over.	• Quality of life (including physical and mental health-related, and social care-related)

Study	Population	Intervention	Comparison	Outcomes
	• Waitlist control: n=15/n=3 Chronic neurological disorder category: Progressive neurological diseases.			
Kos 2016 RCT The Netherlands	N=31 adulrs with multiple sclerosis • Self-management occupational therapy intervention programme: n=17 • Relaxation therapy: n=14 Age in years [Mean (SD)]: • Self-management occupational therapy programme: 37.0 (8.2) • Relaxation therapy 44.0 (8.9) Sex (M/F): Not reported Chronic neurological disorder category: Progressive neurological diseases.	Self-management occupational therapy programme 3x weekly 60-90-minute individual sessions teaching strategies to help participants to perform activities of daily living within available energy limits, and therefore increase their ability to manage fatigue. Sessions focused on balancing daily activities, as well as areas highlighted during initial assessment. Booklets containing evidence-based information on fatigue, strategies to cope with fatigue, and pacing was provided alongside in-person sessions. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Overall approaches	Relaxation therapy 3 x weekly 60-90-minute individual sessions. Programme includes modules on the role of managing stress in multiple sclerosis, and practicing various relaxation techniques. Evidence-based information was compiled into a booklet, and participants kept a stress-reaction diary to inform responses to future stressful events.	• Functional independence
Lannin 2014 RCT Australia	N=42 adults with acquired brain injury • Personal digital assistant: n=21 • Non-electronic memory aid: n=21 Age in years [Mean (SD)]: • Personal digital assistant: 32.4 (11.0)	Personal digital assistant 8 weeks training in the use of a personal digital assistant with an occupational therapist. Meaningful activities were prioritised, followed by 5 structured	Non-electronic memory aid 8 weeks using a non-electronic memory aid and occupational therapy. Occupational therapy sessions included the prioritisation of meaningful activities as	• Personal goal attainment

Study	Population	Intervention	Comparison	Outcomes
	• Non-electronic memory aid: 34.7 (12.1) Sex (M/F): • Personal digital assistant: n=14/n=7 • Non-electronic memory aid: n=12/n=9 Chronic neurological disorder category: Acquired brain injury.	training sessions delivered by neurological occupational therapists. Training modules included selecting appropriate personal digital assistants, awareness of deficits, training in personal digital assistant use, organisational strategies, and generalisation of strategies to a real-world context. Timing, frequency, and duration of sessions were consistent with usual practice delivered in the unit. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Interventions for community living skills	experienced by intervention group. Training of non-electronic memory strategies was delivered individually and within groups, and included use of the diary, compiling lists, formation of cueing strategies, and memory mnemonics. Timing, frequency, and duration of sessions were consistent with usual practice delivered in the unit. Participants were asked not to use any electronic devices (for example, alarms on mobile phones).	
Latella 2022 RCT Italy	N=40 adults with Parkinson's disease • Home automation training: n=20 • Traditional training: n=20 Age in years [Mean (SD)]: • Home automation training: 67.2 (7.0) • Traditional training: 67.4 (7.6) Sex (M/F): • Home automation training: n=11/n=9 • Traditional training n=11/n=9 Chronic neurological disorder category:	Home automation training 3x 60-minutes sessions per week for 8 weeks. Activities of daily living training in small groups (3-5 people) in a home automation room with a variety of easy-to-use tools. A central control allowed the modification of the environment in response to variety of alerts. Furniture could be modified, adaptable tools were available, as well as an adaptable toilet, shower and sink.	Traditional training 3x 60-minutes sessions per week for 8 weeks. Training in small groups (3-5 people) of exercises designed to promote independence in activities of daily living.	• Functional independence • Quality of life (including physical and mental health-related, and social care-related)

Study	Population	Intervention	Comparison	Outcomes
	Progressive neurological diseases.	Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment: Technological interventions		
Miller 2016 RCT UK	N=21 adults with multiple sclerosis • Sensory dynamic orthosis arm sleeve: n=11 • Non-compressive pro-Tem arm sleeve: n=10 Age in years [Mean (SD) not reported] [Median (IQR)][4]: • Sensory dynamic orthosis arm sleeve: 44.5 (22.0) • Non-compressive pro-Tem arm sleeve: 52.0 (11.0) Sex (M/F)[4]: • Sensory dynamic orthosis arm sleeve: n=2/n=9 • Non-compressive pro-Tem arm sleeve: n=4/n=4 Chronic neurological disorder category: Progressive neurological diseases. [4]Only reported for 8 participants in control group.	Sensory dynamic orthosis arm sleeve Worn 6 days a week for 9 weeks. Wear time started from 1-hour a day, increasing by 1-hour every day until participants reached 8-hours per day. Sleeve was custom made and panelled to allow directional stretch as well as increased sensory and proprioceptive feedback. Measured by an orthotist, fitted from wrist crease to 5cm below axilla, and no wrist portion. Protocol intervention category: Interventions, equipment, and devices to support functioning and modify the environment: Interventions for upper limb function	Non-compressive pro-Tem arm sleeve Worn 6 days a week for 9 weeks. Wear time started from 1-hour a day, increasing by 1-hour every day until participants reached 8 hours per day. Sleeve was made with 1 seam running along lateral border of the arm, allowing no directional stretch. Measured by an orthotist, fitted from wrist crease to 5 centimetres below axilla, and no wrist portion.	• Functional independence
Ownsworth 2017 RCT Australia	N=54 adults with traumatic brain injury • Error-based learning: n=27 • Errorless learning: n=27 Age in years [Mean (SD)]: • Error-based learning: 37.37 (13.6)	Error-based learning 8x 90-minute weekly sessions delivered by occupational therapists. Initial 4 sessions involved making a hot meal, and the last 4 sessions focused on multiple	Errorless learning 8x 90-minute weekly sessions delivered by occupational therapists. Initial 4 sessions involved making a hot meal, and the last 4 sessions focused on multiple tasks or a	• Functional independence

Study	Population	Intervention	Comparison	Outcomes
	• Errorless learning: 37.86 (13.3) Sex (M/F): • Error-based learning: n=20/n=7 • Errorless learning: n=23/n=4 Chronic neurological disorder category: Acquired brain injury.	tasks or a multi-step activity informed by participants' goals and interests. Occupational therapists allowed structured opportunities for participants to make errors and self-correct with escalating prompts and feedback. Participants were also trained to anticipate difficulties within a task and reflect over past sessions. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Overall approaches	multistep activity informed by participants' goals and interests. Occupational therapists stopped participants making errors, modelling each step and providing consistent cues to correct actions to aid habit formation throughout sessions.	
Patt 2023 RCT Switzerland	N=106 adults with multiple sclerosis • Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme: n=53 • Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: n=53 Age in years [Mean (SD)]: • Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme: 49.98 (10.90)	Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme The initial one-on-one session evaluated participants' energy use. Subsequent 5 sessions were 1-hour group sessions covering break management, occupational balance, use of body, simplifying activities, and communication. A final session was conducted at home post-discharge to translate lessons to a new setting. High-intensity interval training was	Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme Progressive muscle relaxation. 6x 1-hour sessions of standard relaxation exercises and alternating muscle contraction and relaxation for 11 muscle groups, plus deep breathing. Moderate continuous training. Continuous cycling performed for 24 minutes at 60-70 revolutions per minute. Participants also completed 3-week	• Functional independence • Quality of life (including physical and mental health-related, and social care-related)

Study	Population	Intervention	Comparison	Outcomes
	• Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: 49.51 (8.81) Sex (M/F): • Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme: n=19/n=34 • Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: n=16/n=37 Chronic neurological disorder category: Progressive neurological diseases.	performed on an indoor cycle (5x 1.5-minute intervals at 80-100 revolutions per minute, with a 2-minute break between). Participants also completed 3-week multidisciplinary inpatient rehabilitation programme including physiotherapy, strength training, occupational therapy, and neuropsychology sessions. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Overall approaches	multidisciplinary inpatient rehabilitation programme including physiotherapy, strength training, occupational therapy, and neuropsychology sessions. Note: Study reports this as usual care in study clinic.	
Quinn 2014 RCT UK	N=30 adults with Huntington's disease • Goal directed task-specific mobility training: n=15 • Usual care: n=15 Age in years [Mean (SD)] [5]: • Goal directed task-specific mobility training: 55.0 (10.0) • Usual care: 59.4 (10.0) Sex (M/F) [5]: • Goal directed task-specific mobility training: n=7/n=8 • Usual care: n=6/n=7 Chronic neurological disorder category:	Goal directed task-specific mobility training 2x 1-hour sessions per week for 8 weeks (maximum of 15 sessions) delivered by a physical therapist. Content was tailored to participants' specific limitations in walking, sit-to-stand transfers, standing, and modification of home environments. Individual mobility goals pertaining to walking, sit-to-stand transfers, and standing for the training period were set, which provided	Usual care Participants instructed to continue as normal between assessments, and to not start new medication or physical activity programmes. No further details reported.	• Quality of life (including physical and mental health-related, and social care-related)

Study	Population	Intervention	Comparison	Outcomes
	Progressive neurological diseases. [5]Only reported for 13 participants in control group.	focus for the remaining sessions. Participants were requested to practice by themselves at least once per week. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Overall approaches		
Renfrew 2019 RCT UK	N=85 adults with multiple sclerosis • Functional electrical stimulation: n=42 • Ankle-foot orthosis: n=43 Age in years [Mean (SD)]: • Functional electrical stimulation: 50.4 (10.4) • Ankle-foot orthosis: 51.4 (11.2) Sex (M/F): • Functional electrical stimulation: n=8/n=33 • Ankle-foot orthosis: n=20/n=18 Chronic neurological disorder category: Progressive neurological diseases.	Functional electrical stimulation A physiotherapist fitted an Odstock Dropped Foot Stimulator Pace, and applied a wired heel switch with 40 Hz stimulation frequency. The electrode placement, pulse width, waveform and ramping parameters were tailored to participants, with the current amplitude averaging 40 mA (range 7-72 mA). Incremental use was advised for the first 6 weeks. Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment: Wearable technology	Ankle-foot orthosis Participants wore a custom solid ankle-foot orthosis with 5 milimetre homopolymer polypropylene. Trim lines were anterior to the malleoli with ankle section reinforcement where necessary. The tibia was angled forward by about 10 degrees from vertical and heel wedged were used to finetune each orthosis. Incremental use was advised for the first 6 weeks. Note: Study reports this as usual care in study clinic.	• Quality of life (including physical and mental health-related, and social care-related)
Sturkenboom 2014 RCT The Netherlands	N=191 adults with Parkinson's disease • Home-based occupational therapy: n=124 • Usual care (with no occupational therapy): n=67	Home-based occupational therapy 10 weeks of home-based occupational therapy as per national guidelines on	Usual care (with no occupational therapy) Note: Participants and caregivers were allowed to access other	• Functional independence • Quality of life (including physical and mental health-related, and

Study	Population	Intervention	Comparison	Outcomes
	Age in years [Mean (SD) not reported] [Median (IQR)]: • Home-based occupational therapy: 71.0 (63.3-76.0) • Usual care with no occupational therapy: 70.0 (63.0-75.0) Sex (M/F): • Home-based occupational therapy: n=78/n=46 • Usual care (with no occupational therapy): n=41/n=26 Chronic neurological disorder category: Progressive neurological diseases. Protocol population did not include carers. However, carers were included in the study and carer quality of life is a protocol outcome so carer characteristics are presented here for context. N=180 carers of adults with Parkinson's disease • Home-based occupational therapy: n=117 • Usual care with no occupational therapy: n=63 Age of patient group [Mean (SD) not reported] [Median (IQR)]: As reported above Sex of patient group (M/F): As reported above	occupational therapy in Parkinson's disease, for a maximum of 16 hours. Content was tailored to individual rehabilitation goals, as well as an individuals' capacity for change, and the context for therapy delivery. Caregiver needs in providing support were also assessed. Note: Participants and caregivers were allowed to access other medical, psychosocial, or allied healthcare services outside of the trial. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Interventions for personal activities of daily living	medical, psychosocial, or allied healthcare services outside of the trial.	social care-related) • Carer quality of life

Study	Population	Intervention	Comparison	Outcomes
Veenhuizen 2019 RCT The Netherlands	N=53 adults with neuromuscular disease • Energetic self-management programme: n=29 • Usual care: n=24 Age in years [Mean (SD) not reported] [Median (IQR)]: • Energetic self-management programme: 52.0 (37.0-63.0) • Usual care: 50.0 (41.0-60.0) Sex (M/F): • Energetic self-management programme: n=8/n=21 • Usual care: n=9/n=15 Chronic neurological disorder category: Progressive neurological diseases.	Energetic self-management programme 16-week programme delivered in groups of 4-8 participants, consisting of 4 modules (energy conservation management, aerobic exercise training, exercise education and implementation and relapse prevention). Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Overall approaches	Usual care For 16 weeks participants continued to receive whatever their usual care was (for example, physical therapy, other forms of multidisciplinary rehabilitation care, or no intervention at all).	• Functional independence • Carer quality of life
Volpe 2017 RCT Italy	N=20 adults with Parkinson's disease • Sensory-motor orthosis plus physiotherapy balance programme: n=10 • Physiotherapy balance programme: n=10 Age in years [Mean (SD)]: • Sensory-motor orthosis plus physiotherapy balance programme: 69.18 (7.61) • Physiotherapy balance programme: 63.37 (6.89) Sex (M/F): • Sensory-motor orthosis plus physiotherapy balance	Sensory-motor orthosis plus physiotherapy balance programme Participants were instructed to wear sensory-motor orthosis every day for 14 days, except during balance programme. The orthosis combines biomechanical and sensory-motor input on plantar surface of the foot, exerting pressure on 4 areas to activate medial muscular kinetic chain, lateral muscular kinetic chain, and extensor muscular kinetic chain.	Physiotherapy balance programme 5x 50-minute physiotherapy training sessions per week for 2 weeks (totalling 10 sessions), focusing on improving physical capacity, improving transfers, normalising body posture, balance training and gait training. Balance exercises comprised 30-minutes of the sessions, and included perturbation-based balance-training.	• Quality of life (including physical and mental health-related, and social care-related)

Study	Population	Intervention	Comparison	Outcomes
	programme: n=7/n=3 • Physiotherapy balance programme: n=5/n=3 Chronic neurological disorder category: Progressive neurological diseases.	Participants also received physiotherapy balance programme as per comparison group. Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training: Interventions for functional mobility		

ETAPP: evaluation of a therapeutic aid of the planning function in Prader-Willi Syndrome; Hz: hertz; IQR: interquartile range; mA: milliamperes; RCT: randomised controlled trial; SD: standard deviation; µs: microseconds

See the full evidence tables in appendix D and the forest plots in appendix E.

Summary of the evidence

For the purpose of analysis, results where the effect estimate is above a minimum important difference (MID) and the 95% CI crosses the line of no effect are interpreted as showing no evidence of important difference. If the effect estimate is between the 2 MIDs, this is interpreted as showing no important difference. This level of detail can be found in the GRADE tables in appendix F. However, to improve the clarity of reporting throughout this evidence summary, any effect estimate where the 95% confidence interval crosses a line of no effect has simply been interpreted as no important difference, regardless of whether the point estimate exceeds the minimally important difference.

Overall approaches to personal care and activities of daily living

An error-based learning programme in adults with acquired brain injury showed no statistically significant difference in functional independence when compared with an errorless learning programme group post-intervention and at 6-months follow-up. The term statistically significant benefit rather than important benefit is used because although there is a statistically significant benefit, we cannot ascertain clinical importance (for example, if standard deviations were not reported or if only f-values were reported).

An energetic self-management programme in adults with progressive neurological diseases showed an important benefit in changes in functional independence measures when compared with a control group post-intervention. This benefit remained at 3 months follow-up with satisfaction of functional independence, but not with functional independence performance measures. Conversely, at 11 months follow-up, there was an important benefit shown in changes in performance of functional independence measures in participants receiving the energetic self-management programme intervention, but not in satisfaction at the same time period. Carer quality of life showed no important differences between groups up to 11 months follow-up.

An energy management education and high intensity interval training (HIIT) plus multidisciplinary inpatient rehabilitation programme in adults with multiple sclerosis showed no important difference in functional independence or quality of life compared to participants receiving progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme, at post-intervention, 4 months follow-up or 6 months follow-up.

Self-management occupational therapy in adults with multiple sclerosis showed an important benefit in changes in functional independence performance measures at up to 3 months follow-up when compared to relaxation therapy. However, changes in satisfaction of functioning independence measures showed no important differences between groups at either post-intervention or 3 months follow-up.

Goal directed task-specific mobility training in adults with Huntington's disease showed no important differences in quality of life measures post-intervention or 4 months follow-up when compared to usual care.

All evidence in this section was judged to be of very low to low quality.

Interventions for personal activities of daily living

Tailored physiotherapy and occupational therapy in adults with Parkinson's disease showed no important differences when compared to a waitlist control group in measures of functional independence or quality of life up to 15 months follow-up, or carer quality of life up to 3 months follow-up. The evidence was judged to be of very low quality.

Home-based occupational therapy in adults with Parkinson's disease showed statistically significant increases in measures of functional independence at 3 and 6 months follow-up when compared to participants receiving usual care. No corresponding important differences between groups were found for quality of life at 3 or 6 months follow-up. Overall, the 3 measures of carer quality of life showed no important difference between groups at 3 or 6 months follow-up. One exception to this was EuroQol 5-Dimension visual analogue scale (EQ-5D VAS) results at 3 months follow-up, which was significantly better in carers of people receiving home-based occupational therapy compared to carers of people receiving usual care. This benefit was not retained at 6 months follow-up. The evidence was judged to be of very low quality.

All evidence in this section was judged to be of very low quality.

Interventions for community living skills

Two studies investigated personal digital assistant use compared to non-electronic memory aids in adults with acquired brain injury. Changes in functional independence showed an important benefit for participants in the intervention groups compared to control immediately post-intervention, but this difference was not retained at 4-6 months follow-up. Quality of life and personal goal attainment showed no important difference between groups post-intervention or at 4-6 months follow up. Overall, the 4 measures of carer quality of life showed no important difference between groups post-intervention or at 4-6 months follow-up. Two exceptions to this were Life Satisfaction Questionnaire (LISAT-9) and Caregiver Strain Index (CSI) at 4-6 months follow-up. While LISAT-9 results showed an important benefit for the personal digital assistant groups compared to non-electronic memory aids at this time point, the CSI results reported an important harm in carers of people receiving the intervention compared to carers of people receiving the control.

Metacognitive strategy training in adults with Prader-Willi syndrome showed no important difference in personal goal attainment post-intervention when compared with usual care.

All evidence in this section was judged to be of very low to low quality.

Interventions for functional mobility

A sensory-motor foot orthosis plus physiotherapy balance programme in adults with Parkinson's disease showed no important different in changes in quality of life when compared to people receiving the physiotherapy balance programme alone, either post-intervention or at 1 month follow-up. The evidence was judged to be of very low quality.

Technological interventions

The evidence from 1 study investigating a virtual coach and telerehabilitation with daily life monitoring system intervention in adults with Parkinson's disease receiving was mixed. One functional independence measure (Schwab activities of daily living; ADL) showed an important benefit for people receiving the intervention when compared to a control group at post-intervention. However, another functional independence measure (unified Parkinson's disease rating scale part 2; UPDRS II) showed no important difference between groups at the same time point.

Another study investigating home-based monitoring plus standard in-office management in adults with Parkinson's disease reported no important differences in functional independence measures or carer quality of life at 1 year follow-up when compared to standard in-office management alone.

In the comparison between home automation training in adults with Parkinson's disease versus traditional training, people receiving home automation training had statistically significantly better functional independence and quality of life outcomes immediately post-intervention.

All evidence in this section was judged to be of very low to low quality.

Wearable technology

Functional electrical stimulation in adults with multiple sclerosis showed no important difference in quality of life when compared with people receiving an ankle-foot orthosis therapy alone at 3, 6 or 12 months follow-up. The evidence was judged to be of very low quality.

Interventions for upper limb function

A dynamic elastomeric fabric orthosis in adults with Parkinson's disease showed no evidence of important difference in quality of life when compared with a waitlist control group post-intervention.

A sensory dynamic orthosis arm sleeve in adults with Parkinson's disease showed a significantly lower increase in functional independence performance measures when compared to participants receiving a non-compressive pro-Tem arm sleeve post-intervention. This difference was not seen in functional independence satisfaction measures at the same time point.

The evidence was judged to be of very low quality.

Swallowing exercises, manoeuvres and programmes and swallow re-training by Speech and Language Therapists

The evidence from 1 study investigating expiratory muscle strength training in adults with Parkinson's disease showed no important difference in swallowing quality of life when compared to a placebo sham group post-intervention.

The evidence was judged to be of low quality.

Neuromuscular electrical stimulation or pharyngeal stimulation, transcranial direct current or magnetic stimulation

Pharyngeal electrical stimulation plus standard logopaedic therapy in adults with amyotrophic lateral sclerosis showed no statistically significant difference in functional independence or swallowing-related quality of life outcomes when compared with people receiving standard logopaedic therapy alone at 1 day follow-up, 4 days follow-up, 1 month follow-up or 3 months follow-up.

The evidence was judged to be of very low quality.

There was no evidence for the following interventions:

- Interventions for extended activities of daily living
- Postural/24-hour positioning management systems (including sleep systems)
- Robotic gait orthoses or exoskeletons
- Diet and fluid modification
- Enteral tube feeding

See appendix F for full GRADE tables.

Economic evidence

Included studies

Three economic studies were identified which were relevant to this review (Clarke 2016, Cubo 2017, Sturkenboom 2015).

See supplementary material 2 for details on the economic search undertaken for this guideline.

Excluded studies

Economic studies not included in this review are listed, and reasons for their exclusion are provided in appendix J.

Summary of included economic evidence

The systematic search of the economic literature undertaken for the guideline identified the following studies:

- A UK study which evaluated the cost-utility of combined occupational therapy and physiotherapy for people with idiopathic Parkinson's disease (Clarke 2016),
- A Spanish study which evaluated the cost-effectiveness and cost-utility of home-based motor monitoring for people with idiopathic advanced Parkinson's disease (Cubo 2017),
- A Dutch study which evaluated the cost-utility of occupational therapy for people with Parkinson's disease (Sturkenboom 2015).

One further Spanish study was identified, which assessed the cost-utility of a virtual coach that involved physical and cognitive telerehabilitation and a daily life monitoring system (Del Pino 2023). However, this study had very serious methodological limitations. The study had unclear reporting of costs and quality-adjusted life years (QALYs), and the baseline data and effectiveness came from a single RCT with a small sample (N=18). The study also assumed no change in QALYs in the comparator arm and had a short time horizon (4 months). As a result, the committee did not consider this study in their decision-making.

See the economic evidence tables in appendix H. See Table 3 and Table 4 for the economic evidence profiles of the included studies.

Table 3: Economic evidence profiles for occupational therapy with or without physiotherapy in people with Parkinson's disease

Study	Limitations	Applicability	Other comments	Incremental			Uncertainty
				Costs	Effect	Cost effectiveness	
Clarke 2016 UK	Minor limitations [1]	Directly applicable [2]	-Economic evaluation alongside and RCT (Clarke 2016, N=762) -Intervention: Combined occupational therapy (OT) and physiotherapy (PT) and included a variety of interventions some of which related to the activities of daily living -Comparator: No intervention -Outcome; QALYs (EQ-5D-3L, UK Tariff) -Time horizon: 15 months	£164	QALYs: 0.027	£3,493 per QALY gained	-The cost difference was not significant (95% CI: –£141 to £468) -The QALY difference was not significant (95% CI: –0.010 to 0.065) -The ICER was not significant (95% CI: –£169,371 to £176,358) -The intervention had 50.5% probability of being cost-effective at £20,000 per QALY threshold
Sturkenboom 2015 Netherlands	Minor limitations [3]	Partially applicable [4]	-Economic evaluation alongside an RCT (Sturkenboom 2014, N=191 plus N=180 caregivers) -Intervention: Home-based OT which included a variety of interventions some of which related to the activities of daily living. Also included a component related to the activities to daily living which was aimed at caregivers. -Comparator: No intervention -Outcomes: EQ-5D-3L scores (Dutch tariff) -Time horizon: 6 months	-£433 patient -£26 caregiver	EQ-5D-3L scores over 6 months: 0.02 per patient 0.04 per caregiver	Intervention dominant	-None of the differences in EQ-5D-3L scores were significant -All other analyses were from a societal perspective

CI: confidence interval; EQ-5D-3L: EuroQol 5-dimensions 3-levels; ICER: incremental cost-effectiveness ratio; N: sample size; OT: occupational therapy; PT: physiotherapy; QALY: quality-adjusted life year; RCT: randomised controlled trial; UK: United Kingdom
[1] Short time horizon (15 months), which may not be sufficiently long enough to capture all important differences in costs and outcomes; effectiveness and baseline data from a single RCT
[2] UK study; QALYs estimated using EQ-5D-3L
[3] Baseline and effectiveness data from a single RCT; short time horizon (6 months), which may not be sufficiently long enough to capture all important differences in costs and outcomes; unclear reporting of outcomes (for example, QALYs), however, this was not a problem since intervention was found dominant; most statistical analyses undertaken on costs and outcomes from a societal perspective
[4] Dutch study; QALYs estimated using EQ-5D-3L, however, it used Dutch tariff; base case analysis adopted societal perspective, however, it was possible to estimate costs relevant to the healthcare perspective

Table 4: Economic evidence profile for home-based motor monitoring in people with Parkinson's disease

Study	Limitations	Applicability	Other comments	Incremental			Uncertainty
				Costs	Effect	Cost effectiveness	
Cubo 2017 Spain	Potentially serious limitations [1]	Partially applicable [2]	-Economic evaluation alongside an RCT (Cubo 2017, N=40) -People with idiopathic advanced Parkinson's disease -Intervention: Home-based motor monitoring (HBMM) plus standard in-office visits -Comparator: In-office visits alone -Outcomes: Unified Parkinson's Disease Rating Scale (UPDRS-total score), QALYs (EQ-5D-3L, Spanish tariff) -Time horizon: 12 months	£4,667	UPDRS-total score: -36.14 QALYs: –0.03	£129 per point improvement on the UPDRS scale Intervention dominated using QALYs (lower QALYs and higher costs)	-The cost difference was not significant, p = 0.25 -The differences in scores for each UPDRS sub-scale were not statistically significant, indicating that the difference in the total score was also not statistically significant

EQ-5D-3L: EuroQol 5-dimensions 3-levels; HBMM: home-based motion monitoring; QALY: quality-adjusted life-years; RCT: randomised controlled trial; UPDRS: unified parkinson's disease rating scale
[1] Baseline and effectiveness data from a single small pilot RCT (N=40); short time horizon (12 months), which may not be sufficiently long enough to capture all important differences in costs and outcomes; reporting of some summary costs was unclear; no uncertainty estimated around the incremental cost-effectiveness ratio
[2] Spanish study; QALYs estimated using EQ-5D-3L, however, it used Spanish tariff

Economic model

The cost effectiveness of approaches for improving or maintaining independence in activities of daily living in children and young people was identified as a high priority for de-novo economic modelling. However, the systematic review of effectiveness data did not identify any relevant studies. Consequently, no modelling could be carried out. The committee also considered adult effectiveness data, but it was also insufficient to inform useful and robust modelling.

The committee's discussion of the evidence

The outcomes that matter most

The committee noted the main aim of this evidence review was to determine the effectiveness of approaches for improving or maintaining independence in activities of daily living, and therefore prioritised studies reporting measures of functional independence best reflect this objective. As this can include a diverse set of outcomes, the committee specified that only validated, global measurement tools be included. They discussed the importance of establishing a subsequent increase in quality of life, to ensure that any changes in functional independence were transferable to people's everyday life. The committee agreed that swallowing-related quality of life should also be prioritised as an outcome measure, as this aspect is not covered by global measures of physical and mental health-related, and social care-related quality of life and would therefore be needed to accurately assess interventions for sustaining or improving capability in eating, drinking and swallowing. Finally, the committee discussed that, as important as improving or maintaining independence in activities of daily living is for rehabilitation for chronic neurological disorders, it still needs to be relevant to an individual's rehabilitation programme and goals. Therefore, they chose personal goal attainment as a final critical outcome.

Pain was identified by the committee as an important outcome. As people become more functionally independent in personal care and activities of daily living, there is a chance that their pain levels will also increase. This can not only be classified as an adverse effect that should be avoided if at all possible, but also decreases the acceptability and adherence to an intervention, which will in turn affect the long-term effectiveness. Finally, the committee noted that carer quality of life was a valuable factor to consider when reviewing interventions, with the hope being that the strain on carers should decrease by increasing personal independence in activities of daily living. While this is not always a direct inverse relationship for a variety of reasons (for example, co-morbidities or relationship or severity of disease), the committee decided that this was an important outcome to assess when discussing interventions included in this review.

The quality of the evidence

The evidence was assessed using GRADE methodology and the overall confidence in the findings ranged from very low to low.

Findings were downgraded due to concerns relating to risk of bias (for example, when there was a lack of blinding in a study because rehabilitation interventions and controls are difficult to conceal or if there was poor reporting of the randomisation procedures) and imprecision (for example, when 95% confidence intervals crossed 1 or more decision-making thresholds). Evidence was also downgraded for indirectness (for example, when interventions included aspects such as aerobic exercise training that was not included in the protocol). No evidence was downgraded for inconsistency, although this was due to pooling only being possible for 1 outcome.

There was no evidence for the following interventions:

- Interventions for extended activities of daily living
- Interventions for functional mobility (both indoor and outdoor)
- Postural/24-hour positioning management systems (including sleep systems)
- Robotic gait orthoses or exoskeletons
- Diet and fluid modification: thickeners
- Enteral tube feeding

No evidence was identified for the following outcomes:

- Pain

See appendix F for full GRADE tables with quality ratings of all outcomes.

Benefits and harms

Holistic rehabilitation needs assessment

Related assessments

This review did not look for evidence on interventions to inform the content of assessments for rehabilitation of activities of daily living. However, the committee discussed the need for related assessments to precede rehabilitation in this area to maximise effectiveness and patient satisfaction. Therefore, all recommendations in this section were made by informal consensus, based on the committee's experience and expertise.

The committee discussed that the need for assistance, equipment and environmental adaptations for people with chronic neurological disorders will generally be long-term in nature and may extend beyond the hospital environment. Some adults with long-term complex healthcare needs can qualify for NHS continuing healthcare, through which a variety of rehabilitation can be arranged and funded, greatly reducing emotional and financial burdens on people with chronic neurological disorders and their care network. Eligibility for this can be determined by the completion of decision support tool by a multidisciplinary team of healthcare professionals. Similarly, children and young people may be eligible for rehabilitation needs assistance via an education, health and care plan which should be carried out by a local authority. Additional detailed recommendations on requesting and agreeing an EHC plan are included in the NICE guideline on disabled children and young people up to 25 with severe complex needs, which the committee referred readers to for further information.

Pain management

The committee discussed the importance of adequate pain management during rehabilitation for people with chronic neurological disorders. Although pain was identified as an outcome of interest for interventions for personal care and activities of daily living, no evidence was identified in this review. However, the committee's experience and expertise show how central proper analgesia is on the effectiveness of rehabilitation for chronic neurological disorders. Individuals are much less likely to complete rehabilitation programmes if they cause or exacerbate current pain levels. Unmanaged pain levels can also negatively impact physical functioning and emotional wellbeing, which can mask potential benefits of interventions. Therefore, the committee recommended that pain management should be discussed alongside rehabilitation goals and plans. They also highlighted the reciprocal nature of pain management, noting that interventions to support independent living, equipment and environmental adaptations can also act to reduce or improve pain.

Stability, mobility and limb function

The committee discussed the 2 studies identified in this review investigating upper limb orthoses in people with progressive neurological diseases. Neither study found an important difference, which was at odds with the committee's experience of this intervention. They

noted that each intervention was delivered for a relatively short period of time (8 and 9 weeks), and outcomes were only measured at post-intervention. Furthermore, the studies only reported quality of life and functional independence, which are both multi-factorial outcomes that are very difficult to impact with a single, discrete intervention. Owing to these limitations, the committee agreed not to use this evidence, instead basing a recommendation on their own expert knowledge.

The committee discussed their positive experiences with serial casting, which can be beneficial for some people with chronic neurological disorders and joint contractures which are limiting limb activity or passive function. Serial casting can be useful in children, as the repeated short-term nature of the intervention means it is adaptable and well-suited to the changing developmental phases. For people with chronic neurological disorders, appropriate use of serial casting can prevent secondary complications such as pain, skin breakdown and joint damage.

Stemming from their discussions on limb function, the committee discussed the needs of an important sub-group of people with chronic neurological disorders, namely those less able or not able to move independently. With prolonged periods in static, single positions, these people are at an increased risk of pressure sores, chronic pain, reduced movement due to contracture of muscles and joints, decreased respiratory function and sleep disturbances. Although no evidence was identified in this review for 24- hour postural management strategies, the committee's collective experience is that these are hugely important in mitigating these identified risks so, on that basis, they made a recommendation. Strategies can include, but are not limited to: regular positional changes; bed positioning; wheelchair and seating systems; and splinting. The committee also noted the need for adequate equipment and trained staff to facilitate these strategies.

Eating, drinking and swallowing

The committee discussed the evidence identified for interventions for sustaining or improving capability in eating, drinking and swallowing in people with chronic neurological disorders. One study was identified investigating expiratory muscle strength training in adults with Parkinson's disease, which found no difference between groups in swallowing-related quality of life measures. Another study was identified investigating pharyngeal electrical stimulation in adults with amyotrophic lateral sclerosis, which found no difference between groups in functional independence or swallowing-related quality of life measures. Given that only 2 studies were identified, and considering the specific and often severe needs of the amyotrophic lateral sclerosis population, the committee agreed this evidence was not sufficient to make recommendations. Additionally, they noted a resource impact of recommending pharyngeal electrical stimulation (which is not currently routinely used). Therefore, all recommendations in this section were made based on committee experience and expertise.

Assessment and interventions

The committee discussed the need for accurate and regular assessment within this population. As this guideline covers all people with differing severities of chronic neurological disorders, the committee acknowledged that, while not everyone will need this assessment or resulting level of support, it should be discussed and planned for if needed. The committee highlighted 3 areas for assessment in this population: oral hygiene, as poor mouth care can lead to increased risk of aspirational pneumonia; oral secretion management, as the risk of sialorrhea is increased in people with chronic neurological disorders and this can impact respiratory function and quality of life; and eating, drinking, and swallowing, due to the increased risk of dysphagia. The committee also recommended that if the oral hygiene assessment identifies any particular areas of concern, then the individual should be assisted in following an effective mouthcare regimen. The committee highlighted that, although this process will be overseen by an appropriately trained professional (for example, a dentist or speech and language therapist), the resulting support does not need to be. The committee were aware of

existing NICE guidance for saliva management in certain chronic neurological disorders that should be considered alongside these recommendations. They referred readers to the section on saliva problems in NICE's guideline on motor neurone disease, and the section on drooling of saliva in NICE's guideline on Parkinson's disease in adults. Similarly, there is also existing recommendations on symptoms of dysphagia that may help determine if an assessment was warranted, and therefore the committee also included a cross-reference to the NICE guideline on nutrition support in adults.

The committee then went on to discuss physical interventions for sustaining or preventing deterioration in eating, drinking and swallowing. Although there was no evidence identified to recommend specific interventions, the committee used their expertise to recommend 5 areas that can be effective. Proper posture and positioning are important to optimise a safe swallow and to reduce the risk of coughing and choking. If needed, healthcare professionals can also provide equipment to aid positioning (for example, adjustable seating). Direct therapy approaches (for example, swallowing exercises or manoeuvres) can also be appropriate for some people with chronic neurological disorders, which should be considered and trialled by speech and language therapists as appropriate. Similarly, rehabilitation techniques to regain swallowing could be considered (for example, the Shaker exercise, Masako manoeuvre, expiratory muscle strength training, and neuro-muscular training). Adapted equipment can also help people with upper limb and positioning difficulties, or oro-motor difficulties, to eat and drink independently during meals, and promote swallowing safety. Finally, sensory interventions can assist stimulating the swallowing reflex, support secretion management, and possibly a return to oral feeding in people with a limited or absent swallowing function, people with poor levels of arousal and alertness, and people receiving enteral feeding.

The committee went on to discuss diet modifications for people with chronic neurological disorders. Food and fluid modifications (for example, use of thickeners or pureeing foods) can help people with dysphagia swallow more easily and safely. However, these modifications can also be associated with safety concerns themselves (for example, thickened fluids do not always decrease the risk of aspiration pneumonia whilst detrimentally impacting quality of life or hydration levels). In order to fully evaluate the risks and benefits of this intervention, the committee stipulated that modifying food and fluids should be overseen by a speech and language therapist. Additionally, the committee recommended regularly reviewing a person's ability to eat, drink and swallow. They noted that rehabilitation needs can change over time, especially in people with progressive conditions. However, due to the risk averse nature of many rehabilitation settings, people with chronic neurological disorders can easily continue with modified foods and fluids after there is a need for them because they are deemed to be safer. The committee agreed on the importance of adequate nutrition for people with chronic neurological disorders, as dysphagia can make it difficult to ingest enough calories and nutrients. Therefore, they recommended that people assessed as malnourished (or at risk of it) and unable to maintain a sufficient oral intake be considered for nutritional support. Taking into account the important role eating and drinking plays in people's daily lives and social situations, the committee caveated that decisions surrounding diet modification and nutritional support should not only be made on clinical judgement, but also their best interests and advance directives. The committee were aware of additional guidance covering screening for malnutrition and implementation of oral and enteral nutrition support, and referred readers the NICE guideline on nutritional support in adults for more detailed recommendations on this area. However, it should be noted that this guideline does not cover children and young people.

The committee acknowledged the benefits of enteral nutrition in helping to maintain safe and adequate nutrition in people with chronic neurological disorders and dysphagia. However, they also noted several disadvantages that come with the intervention, not least the loss of a person's autonomy that comes with such an invasive intervention. In the committee's experience, current practice within the NHS tends towards placing people on feeding mechanisms (especially enteral feeding) before strictly necessary, in order to minimise malnutrition and aspiration risks. Therefore, the committee recommended that feeding mechanisms be

considered as a last option. Due to the accepted disadvantages, they also highlighted the importance of obtaining informed consent for these procedures (or that it is determined to be in an individual's best interests or advance directives if the person lacks capacity to consent).

Principles of care

The committee discussed the central importance of proper nutrition in rehabilitation for chronic neurological disorders, impacting all aspects of an individual's care and daily life. Choices about eating and drinking are a fundamental part of independent living, and currently these choices may be taken away from people early in their rehabilitation, without full consideration of all of the options and without thinking about wider implications (for example, how restrictive diets or 'nil by mouth' might impact social participation). The committee highlighted how quickly the ability to eat and drink can deteriorate in people with chronic neurological disorders, and that there is often limited chance to talk through care preferences when this happens. However, they were also aware that no specific time could be recommended for having these conversations, as every individual and context will be different (for example, an individual's capacity to make decisions may change over time). Therefore, they recommended these discussions be carried out at a time suitable for each individual and encouraged inclusion of advance care planning if appropriate.

The committee also discussed that rehabilitation services can be very risk averse in the area of eating and drinking, especially with new neurological injuries, often presenting the least risky but most inconvenient options to individuals, their families and carers (for example, nil by mouth). However, the committee pointed out that encouraging positive risk taking in this population often achieves more favourable outcomes such as prolonged independence. They therefore recommended that individuals with chronic neurological disorders, along with their families and, or carers be educated on the advantages and disadvantages of continuing or re-starting eating and drinking, as well as being trained in any necessary assistive or adaptive equipment.

When supporting individuals with eating and drinking and undertaking risk assessments, the committee discussed that it is helpful to consider personal preferences regarding what and how food and beverages are consumed, and to respect these choices wherever possible. They agreed that informing and educating the person, family members and carers about potential or emerging risks (where there are signs of dysphagia, risks of aspiration or choking) help ensure decision making is informed by the wishes of the person. They also noted that eating and drinking with acknowledged risk (EDAR) may not always be possible as decisions must be informed by the provision of safe care. However, they noted that what was and wasn't safe care could only be fully considered on a case-by-case basis and that blanket restictions in inpatient or residential care settings were unhelpful and potentially discriminatory. Offering relevant safety advice and guidance for everyone involved in the persons care can contribute to ensuring that eating and drinking by mouth is carried out in a way that supports the individual's overall well-being.

As many conditions affecting this population are progressive in nature, the committee discussed the need to ensure future eating and drinking needs (including risks) should be anticipated and discussed. This is especially pertinent as changes in swallowing and nutrition can occur rapidly, even when expected. By predicting and discussing priorities around future nutrition and hydration, rehabilitation plans can correctly identify an individual's preferences even in situations where they are unable to express these themselves.

Independent living, equipment and environmental adaptations

The committee discussed the evidence identified for interventions for independent living, equipment and adaptations for people with chronic neurological disorders. Most studies investigating interventions in this category did not find a difference between groups or this difference was not sustained at follow-up points. The committee spent some time debating the

conflicting results of 2 occupational therapy studies. One relatively large study comparing a tailored physiotherapy and occupational therapy programme with a waitlist control in adults with Parkinson's disease showed no important difference in functional independence, quality of life, or carer quality of life. Conversely, there were better functional independence outcomes and some carer quality of life measures in a study comparing a home-based occupational therapy programme with usual care in the same population up to 6 months post-intervention. However, this study also did not show a difference between groups in quality of life or other measures of carer quality of life. The committee's experience and expertise chimed more with the latter study, although they were surprised that improvements were only seen in a few outcomes. Looking at the studies in greater detail, the committee noted that the tailored physiotherapy and occupational therapy programme offered on average just over 4 hours of contact time over 8 weeks, which they believe is far too brief to show any improvement and below the current standard of care for people with chronic neurological disorders within the NHS. On the other hand, the home-based occupational therapy programme offered a maximum of 16 hours contact time with an occupational therapist, which is closer to what would be seen in current rehabilitation services. Overall, the lack of evidence showing an important difference, the very low or low confidence in findings when a difference was identified, and the fact that evidence only came from single studies with no meta-analysis, meant that this evidence was not considered a sufficient basis for recommendations. Additionally, the committee felt that many of the interventions lack the individualised aspect that is needed for effective rehabilitation for personal care and activities of daily living. Therefore, all recommendations in this section were made by the committee through informal consensus, based on their experience and expertise

Supporting independence with activities of daily living

The committee discussed that, before any interventions to support independence with activities of daily living could be considered, a person's ability in this area should be formally assessed. Not only does this help to identify their strengths and weaknesses in order to build them into a rehabilitation programme, but it will provide baseline data for future assessments and progress monitoring.

The committee discussed and agreed that involving a registered practitioner such as an occupational therapist with and understanding of the persons condition for the assessments could improve the quality, safety, and appropriateness of rehabilitation planning. The committee agreed that there is a risk of misinterpretation of independent living and daily activities if assessments are performed by professionals without appropriate training, which in turn could lead to inaccurate diagnoses or ineffective interventions.

The committee debated the use of compensatory aids for cognitive impairments in people with chronic neurological disorders, which are currently standard practice within rehabilitation services. Their experiences of the effectiveness of these devices were contradictory. While some committee members described them as effective and useful tools, others found them to be confusing and often provided as a one-off intervention accompanied by poor explanations. Between them, the committee clarified that the most important aspect of compensatory aids was helping individuals use them and integrate them into their daily routine, otherwise they would fail. They agreed that one format should not be favoured above the others, as there are a number of factors that should be considered (for example, the format people are most familiar with or if people are able to look at digital displays). Instead, they listed a range of examples that could be used (for example, digital devices, phone apps, paper calendars, sticky notes, and whiteboards.

The committee firmly agreed about the need to support independence and aid participation in people with chronic neurological disorders as much as possible, and note that this could include providing equipment (for example, orthoses or wheelchairs) to support posture and movement. This is not only important in preventing or slowing deterioration in physical functioning, but also to maintain emotional health and wellbeing, allowing individuals as much

choice as possible in their daily living. The committee also discussed that the provision of equipment and adaptations for this purpose is standard care, but currently implemented unequally throughout the population. For example, people with significant physical disabilities which prevent any walking are often prescribed wheelchairs for functional mobility, while people who only find their mobility limited during certain tasks are not.

The committee discussed that in their knowledge and experience some orthotics and splints may be harmful for people living with a functional neurological disorder. The committee acknowledged that while orthotics and splints may be beneficial in other neurological conditions, their application in people with functional neurological disorders requires careful consideration due to the distinct way the disorder functions, as FND is less about structural damage but more about processing brain signals. In the committee's knowledge and experience interventions such as serial casting can lead to significant deterioration in patients with FND including onset or worsening of dystonia. The committee agreed that recovery in FND is often contingent on psychologically-informed approaches, and that interventions such as orthotics and splints can reinforce maladaptive illness beliefs and hinder progress. The committee therefore decided to add a recommendation to take into account the potential harms of inappropriate use of equipment particularly for people with a functional neurological disorder.

Occupational therapy and skills-based learning

The committee discussed the timing of occupational therapy, especially in chronic conditions. Many people with chronic neurological disorders do not access this service until there are symptoms that are affecting their daily life. However, in the committee's experience, effective occupational therapy should begin before the onset of these symptoms to be able to effectively prevent deterioration of skills and prolong independence. In some cases, occupational therapy may also be needed to teach these skills in the first instance (for example, personal care in children and young people). In cases where equipment may be needed (for example, wheelchairs for mobility), early access also gives people time to practice with apparatus before it becomes a necessity. The committee agreed that a benefit of this would be to increase confidence in the use of the equipment. As before, the committee also wanted to highlight that occupational therapy is most effective when it is provided in the settings and contexts an individual commonly encounters and applicable to their rehabilitation goals (for example, shopping in the community).

The committee discussed 2 contrasting methods of skills acquisition training – errorless and error-based learning. Each has advantages and disadvantages. They agreed that, on one hand, errorless learning is beneficial for people with memory impairments and to increase confidence in children and young people. On the other hand, error-based learning is useful to train critical thinking and decision-making skills in different contexts. While the committee agreed that it is important to have a training technique to guide and underpin rehabilitation for personal care and activities of daily living, they did not believe it was appropriate to highlight a particular method due to the breadth of cognitive profiles and problems in this guideline. Therefore, they recommended that both be considered, and the most suitable one for the individual is chosen. Decisions should consider sensory, perceptual, motor planning, and cognitive strengths and weaknesses, as well as the skill being learned.

Environmental adaptations, assistive technology and equipment

The committee discussed that environmental barriers to activities of daily living will be different for each individual, their rehabilitation needs, and the environments they interact with. Due to this level of uncertainty, they did not recommend specific environmental adaptations and equipment. However, they did highlight that assessments to identify barriers be carried out at least for home or residential settings, in order to cover most activities of daily living. Within this assessment, rehabilitation professionals should enact simple solutions (for example, moving furniture and household items to convenient places) and, if needed,

assessments for more substantial handling equipment and environmental adaptations should be completed and referred on as appropriate.

The committee discussed that an individual frequently requires environmental adaptations and equipment from a variety of sources, and that discontinuities and delays in this provision can lead to a variety of issues (for example, people being unable to return home from a clinical setting or unable to travel without assistance). Therefore, services need to work together to coordinate environmental changes in an efficient manner that will be best suited to the person with the chronic neurological disorder.

Application of recommendations across the guideline population

Finally, due to the breadth of guideline population, the committee considered if the recommendations should apply to the entire population of people with chronic neurological disorder or if there were exceptions. It was agreed that, as the recommendations were drafted to be high-level and did not contain any specific interventions only suited to certain groups of people, they should cover the entire guideline population (including adults, children and young people).

The committee were disappointed in the paucity of effectiveness evidence identified for this review question, despite having a relatively large number of included studies. This review area is paramount to rehabilitation for chronic injury, as optimising independence in activities of daily living and personal care allows people with chronic neurological disorders a greater amount of flexibility and autonomy in their daily life. They therefore made a research recommendation covering the original review question, with a view to strengthening existing recommendations and informing new recommendations in future guideline updates.

Cost effectiveness and resource use

The recommendation on assessments for rehabilitation of activities of daily living outlines standard practice, with no additional impact on resources expected.

Pain management is already integral to rehabilitation. Consistently considering pain when discussing and agreeing rehabilitation goals and plans may identify more people needing pain management. However, many existing rehabilitation interventions can also reduce pain or improve pain management, such as fatigue management approaches and psychological interventions for low mood and anxiety, so no significant increase in resource use is anticipated.

The recommendation on serial or removable castings, with or without botulinum toxin, and postural management represents standard practice, with no additional impact on resources expected.

The recommendations on the assessment and management of oral hygiene, oral secretion, and eating, drinking, and swallowing represents standard practice, with no additional impact on resources expected. Providing registered practitioners trained in dysphagia to assess the person’s ability to eat, drink and swallow if there are indicators of dysphagia may require additional staff and training. However, this will help ensure the delivery of appropriate care and may reduce potential harms, which can incur substantial costs to the healthcare system. Other recommendations reflect standard practice, with no resource impact anticipated. Some of these recommendations also reinforce existing NICE guidance.

In terms of interventions, there was existing evidence from 3 economic evaluations alongside RCTs for interventions in independent living, equipment, and adaptations. A UK study found that combined occupational therapy and physiotherapy (versus no intervention) was cost effective for Parkinson's disease, with an incremental cost-effectiveness ratio (ICER) of £3,493 per quality-adjusted life-year (QALY). However, these findings were based on non-significant differences in costs and QALYs, with only a 50.5% probability of being cost effective at

NICE's lower threshold of £20,000 per QALY. The committee noted the 4-hour occupational therapy duration was not representative of the required input for chronic neurological disorders, limiting the relevance of this evidence.

A Dutch study found that occupational therapy (versus standard care) resulted in cost savings and improved EQ-5D-3L scores, making it the dominant intervention for Parkinson's disease. Improvements were noted for both patients and caregivers, but differences in outcomes were not significant, and cost difference significance was not reported. The committee noted the 16-hour therapy duration reflected better outcomes and cost effectiveness compared to the UK study, but the 6-month period was too short to capture all important differences in costs and outcomes.

A Spanish evaluation on home-based motor monitoring (HBMM) plus standard in-office visits (versus in-office visits alone) for advanced Parkinson’s disease found the intervention potentially cost effective using the Unified Parkinson's Disease Rating Scale. However, in-office vis-its alone were dominant when using QALYs. These findings were based on non-significant cost differences, with unclear reporting of some summary costs. The evidence had serious limitations, including data from a small pilot RCT (N=40) and a short 12-month horizon.

The committee discussed that generic measures like EQ-5D used in these studies may not be sensitive enough for people with chronic neurological disorders, leading to an underestimation of QALYs. They also noted the limitations of RCT designs for these patients, as interventions often involve complex, personalised strategies. This makes it difficult to assess the effectiveness of a single standard intervention or ensure a standard comparator across all participants. Chronic neurological disorders require long-term management, and RCTs with shorter timeframes are unlikely to capture long-term outcomes and disease progression. Consequently, the committee was reluctant to consider these economic evaluations when making their recommendations.

The committee noted that occupational therapy is standard practice. Based on their experience, they discussed that early occupational therapy can prevent deterioration of function and independence, especially in people with chronic neurological problems who may experience progressive impairments. While early access may increase pressure on existing services, timely support can help prevent costly inpatient care, outpatient visits, and other costs associated with unmanaged symptoms or complications. It can also reduce reliance on costly formal caregivers and other support services.

The committee noted that both errorless and error-based learning are currently used in skills acquisition training, requiring no additional resources to implement this recommendation.

The committee discussed that recommendations on the assessment for the use of equipment and environmental adaptations represent standard practice and are not expected to require additional resources. However, the recommendation for services to collaborate and optimise communication may imply a change in practices. The committee discussed that any additional costs would be offset by timely access to equipment and adaptations, preventing prolonged inpatient or residential stays and reducing reliance on costly formal care.

When delivering interventions to support independence in daily living activities, practitioners should know which interventions are appropriate and how to apply them. However, there is variation in practice. Therefore, providing registered practitioners to develop and oversee the element of the person’s rehabilitation plan concerned with improving or maintaining independence with activities of daily living may require additional staff and training. This will help ensure the delivery of appropriate care and may reduce potential harms, which can incur substantial costs to the healthcare system.

Where local availability of specialists is restricted, services may have to explore opportunities to bring in the required specialism, for example, by collaborating across services, sharing advice and expertise, and exploring other local and community rehabilitation options supported

by specialist services. These practices should help mitigate any potential resource impact associated with implementing this recommendation.

The recommendation on supporting and training individuals to use compensatory aids to maintain independence in daily living activities represents standard practice and is not expected to require additional resources.

Providing equipment and adaptations (for example, wheelchairs and other assistive devices) for postural support and participation in daily living activities is standard practice. However, there is variation in practice and funding issues, particularly for wheelchairs. To ensure timely delivery of equipment and environmental adaptations, services will have to collaborate more closely. There will also be a need for supportive systems to facilitate this. Therefore, these recommendations may require some additional resources and funding. The committee discussed that increased independence reduces the need for formal support and increases engagement with work, education, and social activities. It also benefits mental health and well-being, thereby reducing related healthcare costs. In their view these equipment and adaptations are not only essential but also likely to be cost effective.

Recommendations supported by this evidence review

This evidence review supports recommendations 1.8.22, 1.8.24, 1.13.3, 1.16.6, 1.16.8, 1.20.1 to 1.20.13, 1.21.1 to 1.21.9 and the recommendation for research on personal care and activities of daily living.

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Appendices

Appendix A Review protocols

Review protocol for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Table 5: Review protocol

ID	Field	Content
0.	PROSPERO registration number	CRD42024518770
1.	Review title	Rehabilitation for independence in activities of daily living
2.	Review question	What is the effectiveness of approaches for improving or maintaining independence in activities of daily living for people with chronic neurological disorders?
3.	Objective	To determine the effectiveness of personal care and activities of daily living rehabilitation interventions for people with chronic neurological disorders.
4.	Searches	The following databases will be searched: • Medline All • Embase • Cochrane Central Register of Controlled Trials (CENTRAL) • Cochrane Database of Systematic Reviews (CDSR) • PsycInfo • Social Policy and Practice Searches will be restricted by: • Date: 2013 onwards • English language • Human studies • Systematic Reviews

ID	Field	Content
		• RCTs • Non-randomised studies Other searches: • Inclusion lists of systematic reviews With the agreement of the guideline committee the searches will be re-run 6 weeks before final submission of the review and further studies retrieved for inclusion. The full search strategies will be published in the final review.
5.	Condition or domain being studied	Rehabilitation interventions to support activities of daily living for people with chronic neurological disorders
6.	Population	Inclusion: Adults and children with rehabilitation needs due to the following chronic neurological disorders: • Acquired brain injury • Acquired spinal cord injury • Acquired peripheral nerve disorders • Progressive neurological diseases • Functional neurological disorders Exclusion: • Conditions which do not fit one of the 5 categories of chronic neurological disorder as defined in the guideline scope. These exclusions will be by exception and examined on a case-by-case basis rather than whole disorder groups. For example, this guideline will not cover autonomic neuropathy or the acute stabilisation of conditions such as encephalitis or hydrocephalus and will not cover degenerative disc disorder as spinal discs do not form part of the spinal cord. • Disorders for which interventions are primarily focused on altering body structure and functions, for example isolated peripheral nerve injuries such as single nerve or plexus injuries. • Surgical management of conditions (for example brain tumours, orthopaedic complications). • Conditions for which NICE rehabilitation and rehabilitation related recommendations already exist, including stroke in people aged 16 years and over, dementia including Alzheimer's disease, cerebral palsy, myalgic encephalomyelitis (or encephalopathy)/chronic fatigue syndrome and post-COVID-19 syndrome.

ID	Field	Content
		• Early rehabilitation after spinal cord injury as this will be covered in the NICE guideline on rehabilitation after traumatic injury
7.	Intervention	1. Interventions to develop skills for adaptive functioning or functional task training • Overall approaches: task/ activity analysis, activity pacing/ energy conservation, task breakdown, staging, cueing and prompting, repetitive task practice task specific training, and play based interventions (which are mediated through support staff/ professional). These approaches can be solely focused on the individual but can also include/'train' the person's family or main carer). • Interventions for personal activities of daily living (PADL), referring to a range of basic activities such as washing, dressing, bathing, going to the toilet, eating and drinking. • Interventions for extended activities of daily living (EADL) encompassing both domestic and community activities: shopping, cooking and housework that allow complete or virtually complete independence. • Interventions for community living skills: self-management, time management, orientation skills, organisational skills, executive skills, orientation, driving, use of public transport. • Interventions for functional mobility (both indoor and outdoor): o Manual wheelchairs o Powered wheelchairs o Walking and mobility equipment o Wearable lower limb orthoses o Wearable upper limb orthoses 2. Interventions, equipment, and devices to support functioning and modify the environment • Technological interventions: telehealth, interactive health monitoring, environmental controls, specialist input devices such as switches and modified computer access devices. • Postural/24-hour positioning management systems (including sleep systems): moulded and bespoke seating systems, specialist seating, tilt in space wheelchairs and reclining wheelchairs (including the role of support staff in this rehabilitation). • Wearable technology o Neuromuscular electrical stimulation (NMES) such as SCI and cycling o Functional Electrical Stimulation (FES) such as foot drop splints o Full body neuroprothesis such as MOLLII suits

ID	Field	Content
		• Robotic gait orthoses or exoskeletons: EKSO bionics, ReWalk, Rex Bionics, Indego. • Interventions for upper limb function: dynamic/ working splints. 3. Interventions for sustaining or improving capability in eating, drinking and swallowing. • Diet and fluid modification: thickeners • Swallowing exercises, manoeuvres and programmes (for example, McNeill Dysphagia Therapy Programme) and swallow retraining by Speech and Language Therapists • Neuromuscular electrical stimulation or pharyngeal stimulation, transcranial direct current or magnetic stimulation • Enteral tube feeding.

8.	Comparator	Interventions compared with others in the same group or:
		• Placebo (placebo or sham)
		• Control (no intervention, waitlist, standard rehabilitation care alone, or 'usual care')
		• The same intervention (as listed under 'intervention') but varied in terms of:
		  ○ Frequency
		  ○ Intensity
		  ○ Timing
		  ○ Setting

9.	Types of study to be included	Include published full-text papers**: • Systematic reviews of RCTs • Experimental studies with random assignment to intervention and control groups. If insufficient* RCT evidence is located to support decision making about children and young people, then experimental studies with non-random assignment to intervention and control groups (quasi-randomised controlled trials, non-randomised controlled trials and prospective and retrospective cohort studies) will also be considered, if a method of controlling for confounding variables is used. Systematic reviews of these studies will also be considered.

ID	Field	Content
		*Sufficiency will be judged on issues such as the number and quality of the included studies; sample sizes, reported outcomes, and availability of data on subgroups of interest. **Studies must match or adjust for age and chronic neurological disorder. Other confounding factors are: • Sex • delivery setting, for instance whether community or inpatient.
10.	Other exclusion criteria	Inclusion: • Full text papers • Studies conducted in the UK, Australia, New Zealand and Canada and high-income European countries (according to the World Bank). Exclusion: • Conference abstracts/proceedings • Non-English language articles • Articles published before 2013 • Books, book chapters and theses. • Papers that do not include methodological details will not be included as they do not provide sufficient information to evaluate risk of bias/study quality.
11.	Context	Recommendations will apply to all inpatient (excluding critical care units), outpatient and community settings, including tertiary settings and care homes in which either fully or partially NHS-funded rehabilitation interventions for chronic neurological disorders are provided.
12.	Primary outcomes (critical outcomes)	• **Functional independence** (assessed using validated, global measures such as Assessment of Motor and Process Skills [AMPS]; Barthel ADL Index; Canadian Occupational Performance Measure [COPM]; Community Integration Questionnaire; FIM Functional Independence Measure; FIM+FAM; Pedi-Cat; Supervision Rating Scale; Sydney Psychosocial Reintegration Scale; Therapy Outcome Measure [TOM]) • **Quality of life including physical and mental health-related, and social care-related** (assessed using validated, global measures, such as the Brain Injury Community Rehabilitation Outcome Scales; EQ5D-3L; EQ5D-5L; EuroQol; FSS Fatigue Severity Scale; Mayo-Portland Adaptability Inventory-4; Multiple Sclerosis

ID	Field	Content
		Impact Scale [MSIS-29 v2]; NeuroQOL; PedsQL; QUOLIBRI; SF-36; WHOQOL-100; WHOQOL-BREF; ASCOT; ICECAP-A]) • **Personal goal attainment** (measured using validated tools such as the Goal Attainment Scale [GAS]) • **Swallowing related quality of life** (measured using validated tools such Dysphagia Disorder Survey [DDS]; Dysphagia outcome and severity scale [DOSS]; Dysphagia Severity Rating Scale [DSRS]; Eating and drinking classification scale [EDACS]; Eating Assessment Tool-10 [EAT-10]; Functional Oral Intake Scale [FOIS]; Malnutrition Universal Screening Tool; MD Anderson Dysphagia Inventory [MDADI]; Neonatal Oral-Motor Assessment Scale [NOMAS]; Oral Health Assessment Tool; Penetration-Aspiration Scale; Swallow Disturbance Questionnaire [SDQ]; Test of masticating and swallowing solids [TOMASS]; Therapy Outcome Measures – Dysphagia [TOMs])
13.	Secondary outcomes (important outcomes)	• **Pain** (measured using validated tools such as the Visual Analogue Scale [VAS] or Numerical Rating Scale [NPRS]. In addition, measures of pain as a biopsychosocial construct include Brief Pain Inventory [BPI], Numerical Pain Rating Scale [NPRS]; Pain Catastrophising Scale [PCS]). • **Carer quality of life** (using a validated, global measure such as the Adult Social Care Outcomes toolkit for Carers [ASCOT – Carers] and the Carer Experience Scale [CES]; AC QoL Adult Carers Quality of Life; Caregiver Burden Scale/ Carer Strain Index; PedsQL-fim)
14.	Data extraction (selection and coding)	All references identified by the searches and from other sources will be uploaded into EPPI reviewer and de-duplicated. Titles and abstracts of the retrieved citations will be screened to identify studies that potentially meet the inclusion criteria outlined in the review protocol. Dual sifting will be performed on at least 10% of records (or 300 records, whichever is smaller); 90% agreement is required and disagreements will be resolved via discussion with the senior systematic reviewer. The full set of records will not be dual screened because the population, interventions and relevant study designs are relatively clear and should be readily identified from titles and abstracts. Full versions of the selected studies will be obtained for assessment. Studies that fail to meet the inclusion criteria once the full version has been checked will be excluded at this stage. Each study excluded after checking the full version will be listed, along with the reason for its exclusion.

ID	Field	Content
		The included and excluded studies lists will be circulated to the Topic Group for their comments. Resolution of disputes will be by discussion between the senior reviewer, Topic Advisor and Chair. A standardised form will be used to extract the following data from included studies: study details (reference, country where study was carried out, type and dates), participant characteristics, inclusion and exclusion criteria, details of the interventions if relevant, setting and follow-up, relevant outcome data and source of funding. This will be quality assessed by the senior reviewer.
15.	Risk of bias (quality) assessment	Quality assessment of individual studies will be performed using the following checklists: • ROBIS tool for systematic reviews • Cochrane RoB tool v.2 for RCTs • Cochrane ROBINS-I tool for non-randomised controlled trials. The quality assessment will be performed by one reviewer and this will be quality assessed by the senior reviewer.
16.	Strategy for data synthesis	Depending on the availability of the evidence, the findings will be summarised narratively or quantitatively. Where possible, meta-analyses will be conducted using Cochrane Review Manager software. A fixed effect meta-analysis will be conducted and data will be presented as risk ratios or odds ratios for dichotomous outcomes, and mean differences or standardised mean differences for continuous outcomes. Heterogeneity in the effect estimates of the individual studies will be assessed using the I2 statistic. Alongside visual inspection of the point estimates and confidence intervals, I2 values of greater than 50% and 80% will be considered as significant and very significant heterogeneity, respectively. Heterogeneity will be explored as appropriate using sensitivity analyses and pre-specified subgroup analyses. If heterogeneity cannot be explained through subgroup analysis then a random effects model will be used for meta-analysis, or the data will not be pooled. The confidence in the findings across all available evidence will be evaluated for each outcome using an adaptation of the 'Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox' developed by the international GRADE working group: http://www.gradeworkinggroup.org/ Importance and imprecision of findings will be assessed against minimally important differences (MIDs). Default MIDs will be used for risk ratios and continuous outcomes only, unless the committee pre-specifies published or other MIDs for specific outcomes

ID	Field	Content	

		• For risk ratios: 0.8 and 1.25.
		• For continuous outcomes:
		  ○ MID is calculated by ranking the studies in order of SD in the control arms. The MID is calculated as +/- 0.5 times median SD.
		  ○ For studies that have been pooled using SMD (meta-analysed): +0.5 and -0.5 in the SMD scale are used as MID boundaries.	

17.	Analysis of sub-groups	Evidence will be stratified by: • Age at time of intervention (children versus adults). Children are classified as being aged 17 years or younger. • Functional neurological disorders as distinct from the 4 other categories of neurological disorder. Evidence will be sub-grouped by the following only in the event that there is significant heterogeneity in outcomes: • The 4 disorder categories not separated out through a priori stratification (acquired brain injury, acquired spinal cord injury, acquired peripheral nerve disorders and progressive neurological diseases) • Study design (RCT versus NRS) • Age (for the ≤17 years of age stratification only). Categories are <4 years, 4-11 years and >11 years Where evidence is stratified or sub-grouped the committee will consider on a case-by-case basis if separate recommendations should be made for distinct groups. Separate recommendations may be made where there is evidence of a differential effect of interventions in distinct groups. If there is a lack of evidence in one group, the committee will consider, based on their experience, whether it is reasonable to extrapolate and assume the interventions will have similar effects in that group compared with others.	
18.	Type and method of review	☒	Intervention
		☐	Diagnostic
		☐	Prognostic
		☐	Qualitative
		☐	Epidemiologic
		☐	Service Delivery

ID	Field	Content		
		☐ Other (please specify)		
19.	Language	English		
20.	Country	England		
21.	Anticipated or actual start date	September 2023		
22.	Anticipated completion date	December 2023		
23.	Stage of review at time of this submission	Review stage	Started	Completed
		Preliminary searches	☑	☑
		Piloting of the study selection process	☑	☑
		Formal screening of search results against eligibility criteria	☑	☑
		Data extraction	☑	☑
		Risk of bias (quality) assessment	☑	☑
		Data analysis	☑	☑
24.	Named contact	**5a Named contact** National Institute for Health and Care Excellence (NICE) **5b Named contact e-mail** rehabforcnd@nice.org.uk **5c Organisational affiliation of the review** National Institute for Health and Care Excellence (NICE)		
25.	Review team members	NICE review team		
26.	Funding sources/sponsor	This systematic review is being completed by NICE which receives funding from the Department of Health and Social Care.		

ID	Field	Content	
27.	Conflicts of interest	All guideline committee members and anyone who has direct input into NICE guidelines (including the evidence review team and expert witnesses) must declare any potential conflicts of interest in line with NICE's code of practice for declaring and dealing with conflicts of interest. Any relevant interests, or changes to interests, will also be declared publicly at the start of each guideline committee meeting. Before each meeting, any potential conflicts of interest will be considered by the guideline committee Chair and a senior member of the development team. Any decisions to exclude a person from all or part of a meeting will be documented. Any changes to a member's declaration of interests will be recorded in the minutes of the meeting. Declarations of interests will be published with the final guideline.	
28.	Collaborators	Development of this systematic review will be overseen by an advisory committee who will use the review to inform the development of evidence-based recommendations in line with section 3 of Developing NICE guidelines: the manual. Members of the guideline committee are available on the NICE website: https://www.nice.org.uk/guidance/indevelopment/gid-ng10181.	
29.	Other registration details	Not applicable.	
30.	Reference/URL for published protocol	https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42024518770	
31.	Dissemination plans	NICE may use a range of different methods to raise awareness of the guideline. These include standard approaches such as: • notifying registered stakeholders of publication • publicising the guideline through NICE's newsletter and alerts • issuing a press release or briefing as appropriate, posting news articles on the NICE website, using social media channels, and publicising the guideline within NICE.	
32.	Keywords	Quantitative; effectiveness; personal care, activities of daily living, rehabilitation	
33.	Details of existing review of same topic by same authors	Not applicable.	
34.	Current review status	☐	Ongoing
		☐	Completed but not published
		☒	Completed and published
		☐	Completed, published and being updated
		☐	Discontinued

ID	Field	Content
35.	Additional information	Not applicable.
36.	Details of final publication	www.nice.org.uk

ASCOT: adult social care outcomes toolkit; COVID-19: Coronavirus; EQ-5D-3L: EuroQol 5-dimensions 3-levels; EQ-5D-5L: EuroQol 5-dimensions 5-levels; FIM+FAM: functional independence measure and functional assessment measure; GRADE: Grading of Recommendations Assessment, Development and Evaluation; ICECAP-A: investigating choice experiences capability measure for adults; MID: minimally important difference; NeuroQOL: quality of life in neurological disorders; NRS: non-randomised study; PedsQL: paediatric quality of life; PedsQL-fim: paediatric quality of life family impact module; RCT: randomised controlled trial; RoB: risk of bias; ROBINS-I: risk of bias in non-randomised studies - of interventions; ROBIS: risk of bias in systematic reviews; SD: standard deviation; SF-36: 36-item short form survey; SMD: standardised mean difference; QUOLIBRI: quality of life after brain injury; WHOQOL-BREF: World Health Organisation quality of life brief format; WHOQOL-100: World Health Organisation quality of life 100 questions

Appendix B Literature search strategies

Literature search strategies for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Databases: Medline all

Date of last search: 05/01/2024

#	Searches
1	(CRANIOCEREBRAL TRAUMA/ or brain injuries/ or exp brain hemorrhage, traumatic/ or exp brain injuries, diffuse/ or exp brain injuries, traumatic/ or exp brain injury, chronic/ or Shaken Baby Syndrome/ or HYPOXIA, BRAIN/ or Brain Damage, Chronic/ or exp INTRACRANIAL HEMORRHAGE, TRAUMATIC/ or exp BRAIN NEOPLASMS/ or BRAIN DISEASES/ or BRAIN ABSCESS/ or BRAIN DISEASES, METABOLIC/ or CEREBELLAR DISEASES/ or cerebrovascular disorders/ or basal ganglia cerebrovascular disease/ or cerebrovascular trauma/ or intracranial arteriovenous malformations/ or "intracranial embolism and thrombosis"/ or intracranial hemorrhages/ or vascular headaches/ or exp ENCEPHALITIS/ or exp HYDROCEPHALUS/) not (exp STROKE/ or dementia/)
2	((brain* or cereb* or craniocereb* or cranial or intracrani* or neurocognit*) adj2 (injur* or trauma* or damage* or disease*1 or disorder* or infect* or h?emorrhag* or neoplasm* or cancer* or tumo?r* or insult* or impair* or ischemi* or ischaemi* or infarcti* or hypoxi* or drown*)).ti,ab.
3	(chronic* adj1 trauma* adj2 encephalopath*).ti,ab.
4	((infratentorial* or supratentorial* or hypothalam* or pituitar* or choroid plexus) adj2 (neoplasm* or cancer* or tumo?r* or carcinom* or adenocarcinom*)).ti,ab.
5	(brain* adj2 abscess*).ti,ab.
6	(carotid arter* adj2 (disease* or injur*)).ti,ab.
7	("basal ganglia disease*" or encephalitis or meningoencephalitis or hydrocephal* or "paraneoplastic cereb* degenerat*" or "shak* baby syndrome*").ti,ab.
8	exp STROKE/ and (ADOLESCENT/ or MINORS/ or exp CHILD/ or exp INFANT/ or exp PEDIATRICS/ or exp PUBERTY/)
9	(stroke? adj3 (p?ediatric* or child* or adolescen* or kid or kids or youth* or youngster* or minor or minors or underage* or under-age* or "under age*" or teen or teens or teenager* or juvenile* or boy or boys or boyhood or girl or girls or girlhood or schoolchild* or "school age*" or schoolage* or "under 16" or "under sixteen*")).ti,ab.
10	exp SPINAL CORD INJURIES/ or exp SPINAL CORD NEOPLASMS/ or EPIDURAL ABSCESS/ or SPINAL CORD DISEASES/ or exp SPINAL CORD VASCULAR DISEASES/ or SPINAL CORD COMPRESSION/ or MYELITIS, TRANSVERSE/
11	((spinal* or spine?) adj2 (injur* or trauma* or tumo?r* or neoplasm* or cancer* or infect* or insult* or disease? or disorder* or degenrat* or compress* or vascular* or ischemi* or ischaemi* or infarct* or h?emorrhag*)).ti,ab.
12	(Central cord syndrome* or transverse myelitis).ti,ab.
13	(epidural* adj2 (neoplasm* or cancer* or tumo?r* or abscess*)).ti,ab.
14	((spinal* or spine?) adj2 (viral* or virus* or polio* or acquired immunodeficiency syndrome or AIDS or HIV or bacterial* or neurosyphili* or neuro-syphili* or tubercul*)).ti,ab.
15	PERIPHERAL NERVE INJURIES/ or exp CRANIAL NERVE INJURIES/ or PERIPHERAL NERVOUS SYSTEM NEOPLASMS/ or exp CRANIAL NERVE NEOPLASMS/ or exp PERIPHERAL NERVOUS SYSTEM DISEASES/ or exp CRANIAL NERVE DISEASES/
16	((periph* or cranial*) adj1 (nerve? or nervous system) adj2 (injur* or trauma* or disorder* or disease* or damage* or neoplasm* or cancer* or tumo?r* or inflamm* or autoimmun* or paraneoplastic* or neuropath* or syndrome?)).ti,ab.
17	(Guillain* adj1 Barr*).ti,ab.
18	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) adj1 nerve* adj1 injur*).ti,ab.
19	(optic* adj1 nerve* adj2 (neoplasm* or cancer* or tumo?r*)).ti,ab.

#	Searches
20	(brachial plexus adj1 (neuropath* or neuritis)).ti,ab.
21	(complex regional pain syndrome* or causalgia or mononeuropath* or nerve compression syndrome*).ti,ab.
22	((femoral or median or peroneal or radial or sciatic or tibial or ulnar) adj1 neuropath*).ti,ab.
23	((carpal-tunnel or piriformis-muscle or tarsal-tunnel or thoracic-outlet) adj1 syndrome*).ti,ab.
24	(pudendal neuralgia or polyneuropath* or polyradiculoneuropath* or polyradiculopath* or radiculopath*).ti,ab.
25	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) adj1 nerve* adj1 disease*).ti,ab.
26	(periph* adj2 neuropath*).ti,ab.
27	(((periph* or cranial*) adj2 (nerve? or nervous system)) and lupus).ti,ab.
28	((multi-focal* or multifocal*) adj2 motor adj1 neuropath*).ti,ab.
29	(((periph* or cranial*) adj2 (nerve? or nervous system)) and alcohol*).ti,ab.
30	exp MOTOR NEURON DISEASE/ or POSTPOLIOMYELITIS SYNDROME/ or exp PARKINSONIAN DISORDERS/ or MUSCULAR DYSTROPHY, DUCHENNE/ or exp MULTIPLE SCLEROSIS/ or NEUROMUSCULAR DISEASES/ or SPASTIC PARAPLEGIA, HEREDITARY/ or FRIEDREICH ATAXIA/ or exp MULTIPLE SYSTEM ATROPHY/ or SUPRANUCLEAR PALSY, PROGRESSIVE/ or CORTICOBASAL DEGENERATION/ or LEUKODYSTROPHY, METACHROMATIC/ or exp MITOCHONDRIAL MYOPATHIES/ or exp MUCOPOLYSACCHARIDOSES/ or WILLIAMS SYNDROME/ or GENETIC DISEASES, INBORN/ or RETT SYNDROME/ or FETAL ALCOHOL SPECTRUM DISORDERS/ or DYSTONIC DISORDERS/ or "HEREDITARY SENSORY AND MOTOR NEUROPATHY"/ or SPINAL DYSRAPHISM/
31	(neurolog* adj1 (condition* or disease* or damage* or disorder* or impair*)).ti,ab.
32	((motor-neuron* or gehrig* or charcott* or kennedy*) adj1 disease*).ti,ab.
33	((amyotroph* or primary) adj1 lateral* adj1 sclero*).ti,ab.
34	(bulbar adj1 pals*).ti,ab.
35	((muscular or muscle* or bulbo) adj1 atroph* adj1 spin*).ti,ab.
36	(progressiv* adj1 (muscular or muscle*) adj1 atroph*).ti,ab.
37	((postpolio* or post-polio*) adj1 syndrome?).ti,ab.
38	(Parkinson* or duchenne* or multiple scleros?s* or aphasia or creutzfeldt-jakob or huntington* or kluver-bucy).ti,ab.
39	(muscular adj1 dystroph*).ti,ab.
40	(neuromusc* adj1 (disease* or disorder?)).ti,ab.
41	(heredit* adj1 spastic* adj1 parapleg*).ti,ab.
42	"friedreich* ataxia*".ti,ab.
43	((multiple system or olivopontocerebellar) adj1 atroph*).ti,ab.
44	(shy-drager syndrome* or striatonigral degenerat* or batten* disease?).ti,ab.
45	(progressive adj1 supranuclear adj1 pals*).ti,ab.
46	(richardson* adj1 (disease? or syndrome?)).ti,ab.
47	((corticobasal or cortico basal) adj1 degenerat*).ti,ab.
48	(white adj1 matter adj1 disorder?).ti,ab.
49	(metachromatic leukodystroph* or mitochondrial myopath* or mucopolysaccharidos*).ti,ab.
50	(lysosomal adj1 storage adj1 disorder?).ti,ab.
51	((genetic or William* or catch-22 or rett* or congenital or f?etal alcohol) adj1 (syndrome or disorder*)).ti,ab.
52	(perinatal illness* or perinatal hypoxia*).ti,ab.
53	(primary adj1 dystonia?).ti,ab.
54	(heredit* adj1 motor* adj1 sens* adj1 neuropath*).ti,ab.
55	(spina bifida? or spinal dysraphism?).ti,ab.
56	MOVEMENT DISORDERS/ or MOTOR DISORDERS/ or CONVERSION DISORDER/

#	Searches
57	((functional* or psychogenic* or dissociative*) adj1 neurologic* adj1 (disorder* or dysfunction* or difficult*)).ti,ab.
58	((movement* or motor* or convers*) adj1 (disorder* or dysfunct*)).ti,ab.
59	((psychogenic or dissociative or non-epilep* or nonepilep*) adj1 (seizure* or convulsion* or fit or fits or spasm* or attack*)).ti,ab.
60	(pseudo-seizure* or pseudoseizure*).ti,ab.
61	(medical* adj1 (unexplain* or un-explain*) adj1 symptom?).ti,ab.
62	or/1-61
63	(intervention* adj5 adapt* adj3 function*).ti,ab.
64	(function* adj3 task* adj3 train*).ti,ab.
65	"TASK PERFORMANCE AND ANALYSIS"/ and rh.fs.
66	"TASK PERFORMANCE AND ANALYSIS"/ and rehab*.ti,ab.
67	((task? or activit*) adj3 (analys* or pacing or pace? or break* or staging or staged or cue* or prompt*)).ti,ab.
68	(energ* adj3 conserv*).ti,ab.
69	((hierarch* or supervis*) adj3 prompt*).ti,ab.
70	coach*.ti,ab.
71	((repetitiv* or repeat* or practice? or practicing) adj3 (task? or skill?)).ti,ab.
72	((train* or retrain* or relearn*) adj3 (task? or skill?)).ti,ab.
73	PLAY THERAPY/
74	(play* adj3 (intervention* or therap*)).ti,ab.
75	(intervention* adj5 activit* adj3 daily living).ti,ab.
76	(intervention* adj5 everyday living).ti,ab.
77	(personal* adj5 activit* adj3 daily living).ti,ab.
78	(personal* adj3 care adj3 assist*).ti,ab.
79	(intervention* adj5 (wash* or dress* or groom* or bath* or toilet* or eat* or drink*)).ti,ab.
80	((grab or drop down) adj3 rail*).ti,ab.
81	(toilet adj3 (frame? or seat*)).ti,ab.
82	commode?.ti,ab.
83	((bath* or shower*) adj3 (chair* or seat* or lift?)).ti,ab.
84	(wash* adj3 dry* adj3 toilet?).ti,ab.
85	((adapt* or sit*) adj3 (bath? or shower* or toilet*)).ti,ab.
86	((wash* or dress* or groom* or bath* or toilet* or eat* or drink*) adj3 aid?).ti,ab.
87	(personal* adj3 (hygien* or groom*)).ti,ab.
88	"COOKING AND EATING UTENSILS"/
89	((adapt* or weight* or ergonomic* or large*) adj3 (cutlery or utensil? or spoon? or fork? or blade? or handle?)).ti,ab.
90	((feed* or food? or eat* or universal) adj3 (cuff? or strap?)).ti,ab.
91	(splayd? or sporf? or spork?).ti,ab.
92	((nonslip* or antislip* or slip* or grip*) adj3 mat?).ti,ab.
93	((plate? or crockery) adj3 (warm* or guard* or adapt*)).ti,ab.
94	((assist* or self) adj3 (eat* or feed*) adj3 device?).ti,ab.
95	(mobile adj3 arm? adj3 support*).ti,ab.
96	Neater-Eater.ti,ab.
97	((adapt* or ergonomic*) adj3 (cup? or bottle? or drink*)).ti,ab.
98	((angle? or handle? or spill*) adj3 (cup? or spout?)).ti,ab.
99	((adapt* or ergonomic* or one way or Pat Saunder*) adj3 straw?).ti,ab.
100	(extended adj5 activit* adj3 daily living).ti,ab.
101	(domestic* adj5 activit* adj3 daily living).ti,ab.

#	Searches
102	(intervention* adj5 (domestic* or communit* or housework* or shop* or cook* or clean* or (house* adj3 manag*))).ti,ab.
103	((domestic* or communit* or house* or shop* or cook* or clean*) adj3 aid?).ti,ab.
104	((live? or living or complet*) adj3 independen*).ti,ab.
105	(communit* adj3 living adj3 skill?).ti,ab.
106	SELF-MANAGEMENT/
107	SELF CARE/
108	(self adj3 (manag* or care)).ti,ab.
109	TIME MANAGEMENT/
110	(time adj3 manag*).ti,ab.
111	(intervention* adj3 (orientat* or organis* or executive)).ti,ab.
112	((orientat* or organis* or executive) adj3 skill?).ti,ab.
113	AUTOMOBILE DRIVING/
114	((intervention* or aid? or help* or skill?) adj3 (drive or driving or car or cars or transport* or bus or buses or tram? or train?)).ti,ab.
115	((car or cars or vehicle?) adj3 adapt*).ti,ab.
116	(intervention? adj3 functional mobility).ti,ab.
117	WHEELCHAIR/
118	(wheelchair? or wheel chair?).ti,ab.
119	CANES/
120	WALKERS/
121	CRUTCHES/
122	((walk* or ambulat*) adj3 (aid? or stick? or cane? or frame?)).ti,ab.
123	((gutter or pulpit or delta) adj3 frame?).ti,ab.
124	(stand* adj3 (frame? or aid*)).ti,ab.
125	ORTHOTIC DEVICES/
126	FOOT ORTHOSES/
127	BRACES/
128	ATHLETIC TAPE/
129	(orthos?s or orthotic).ti,ab.
130	(mobile adj3 support?).ti,ab.
131	((ankle? or leg?) adj3 (brace? or bracing)).ti,ab.
132	(push adj3 (brace? or bracing or aequi)).ti,ab.
133	(full* adj3 length* adj3 caliper?).ti,ab.
134	(leg? adj3 caliper?).ti,ab.
135	strapp*.ti,ab.
136	taping.ti,ab.
137	((intervention? or equipment or device?) adj5 support* adj3 function*).ti,ab.
138	((intervention? or equipment or device?) adj5 modif* adj3 environment*).ti,ab.
139	(tech* adj3 intervention?).ti,ab.
140	TELEMEDICINE/
141	TELEREHABILITATION/
142	((tele* or virtual) adj3 (health* or medicine or rehab*)).ti,ab.
143	(telehealth* or tele-health* or telemedicine or tele-medicine or telerehab* or tele-rehab* or virtualhealth* or virtual-health* or virtualmedicine or virtual-medicine or virtualrehab* or virtual-rehab*).ti,ab.
144	((phone? or smartphone? or app? or tablet? or web or internet or computer* or online) adj3 (medicine or rehab*)).ti,ab.
145	(interact* adj3 health* adj3 monitor*).ti,ab.

#	Searches
146	SELF-HELP DEVICES/
147	(assist* adj3 (device? or technolog*)).ti,ab.
148	((self help or selfhelp) adj3 (device? or technolog* or aid?)).ti,ab.
149	(environment* adj3 control* adj5 (device? or technolog* or intervention?)).ti,ab.
150	((adapt* or modif*) adj3 (device? or technolog* or equipment)).ti,ab.
151	((adapt* or modif*) adj3 (light* or lamp? or fan? or door? or curtain? or window? or grip? or handle? or intercom? or alarm? or pager?)).ti,ab.
152	COMMUNICATION AIDS FOR DISABLED/
153	USER-COMPUTER INTERFACE/
154	AMBIENT INTELLIGENCE/
155	SPEECH RECOGNITION SOFTWARE/
156	EYE-TRACKING TECHNOLOGY/
157	(communicat* adj3 (aid? or board?)).ti,ab.
158	(comput* adj3 interfac*).ti,ab.
159	(input adj3 device?).ti,ab.
160	((ambient* or alternativ* or augment*) adj3 tech*).ti,ab.
161	((voice? or speech* or speak*) adj3 recog* adj3 (software or technolog* or device?)).ti,ab.
162	(eye? adj3 (gaze? or gazing or track*) adj3 (software or technolog* or device?)).ti,ab.
163	((blink* or tilt* or resist* or suck* or puff*) adj3 (switch* or button*)).ti,ab.
164	(keyboard? or joystick? or roller ball?).ti,ab.
165	(mouse adj3 (computer* or tracking)).ti,ab.
166	PATIENT POSITIONING/
167	POSTURE/ and rh.fs.
168	POSTURE/ and rehab*.ti,ab.
169	((position* or postur*) adj3 (manag* or therap* or rehab*)).ti,ab.
170	((twenty four or "24") adj3 (hour? or "h" or "hr") adj5 (postur* or position*)).ti,ab.
171	(("24h" or "24hr") adj5 (postur* or position*)).ti,ab.
172	(sleep* adj3 system?).ti,ab.
173	((carved or mould*or modul* or adapt* or bespoke or system? or special*) adj3 seat*).ti,ab.
174	(backrest? or back rest?).ti,ab.
175	((seat* or sit*) adj3 wedge?).ti,ab.
176	(cushion? or cushioning).ti,ab.
177	((lateral* or lumbar) adj3 support*).ti,ab.
178	((rise* or rising or riser or reclin* or electr* or immers* or comf* or tilt*) adj3 (chair* or arm-chair?)).ti,ab.
179	WEARABLE ELECTRONIC DEVICES/
180	(wear* adj3 (tech* or device?)).ti,ab.
181	((wear* or worn or cloth* or strap* or armband? or waistband? or shorts or trousers or splint*) adj5 (neuromuscular* or function* or electric* or stimulat* or NMES or FES)).ti,ab.
182	NEURAL PROSTHESES/
183	((neural or neuro) adj3 prosthe*).ti,ab.
184	(neuralprosthe* or neuroprosthe*).ti,ab.
185	MOLLII.ti,ab.
186	ROBOTICS/ and (GAIT/ or ORTHOTIC DEVICES/)
187	EXOSKELETON DEVICE/
188	(robot* adj5 (gait or lower limb* or lower extremit* or ortho* or train*)).ti,ab.
189	(exoskeleton* or exo-skeleton*).ti,ab.
190	((EKSO or Rex) adj3 bionic*).ti,ab.
191	(rewalk or Indego).ti,ab.

#	Searches
192	((intervention? or device?) adj5 upper adj3 (limb? or extremit*)).ti,ab.
193	((intervention? or device?) adj5 arm?).ti,ab.
194	(saebo adj3 (reach or glove or flex)).ti,ab.
195	(upper adj3 (limb? or extremit*) adj3 splint*).ti,ab.
196	(arm? adj3 splint*).ti,ab.
197	((dynamic or extension or working) adj3 splint*).ti,ab.
198	(intervention* adj5 (sustain* or improv* or capab*) adj3 (eat* or drink* or swallow*)).ti,ab.
199	((diet* or food* or fluid?) adj3 modif*).ti,ab.
200	((food* or fluid?) adj5 (thicken* or consistenc*)).ti,ab.
201	((swallow* or deglutition or inglutition or dysphagia) adj3 (train* or retrain* or re-train* or manag* or therap* or rehab* or exercis* or manoeuvre? or program*)).ti,ab.
202	(ELECTRIC STIMULATION/ or ELECTRIC STIMULATION THERAPY/ or TRANSCRANIAL DIRECT CURRENT STIMULATION/ or TRANSCRANIAL MAGNETIC STIMULATION/) and (DEGLUTITION/ or DEGLUTITION DISORDERS/)
203	((electric* or direct current or magnetic) adj3 stimulat* adj5 (swallow* or deglutition or inglutition or dysphagia)).ti,ab.
204	(pharyngeal adj3 stimulat*).ti,ab.
205	ENTERAL NUTRITION/
206	INTUBATION, GASTROINTESTINAL/
207	GASTROSTOMY/
208	JEJUNOSTOMY/
209	((enteral* or tube?) adj3 (nutrition* or feed* or fed*)).ti,ab.
210	((nasogastric* or gastrointestinal*) adj3 (tube? or intubat* or nutrition* or feed* or fed*)).ti,ab.
211	gastrostom*.ti,ab.
212	jejunostom*.ti,ab.
213	ACTIVITIES OF DAILY LIVING/ and (REHABILITATION/ or NEUROLOGICAL REHABILITATION/)
214	ACTIVITIES OF DAILY LIVING/ and rehab*.ti.
215	or/63-214
216	62 and 215
217	letter/
218	editorial/
219	news/
220	exp historical article/
221	Anecdotes as topic/
222	comment/
223	case reports/
224	(letter or comment*).ti.
225	or/217-224
226	randomized controlled trial/ or random*.ti,ab.
227	225 not 226
228	animals/ not humans/
229	exp Animals, Laboratory/
230	exp Animal Experimentation/
231	exp Models, Animal/
232	exp Rodentia/
233	(rat or rats or rodent* or mouse or mice).ti.
234	or/227-233
235	216 not 234

#	Searches
236	limit 235 to english language
237	limit 236 to yr="2013 -Current"
238	meta-analysis/
239	meta-analysis as topic/
240	(meta analy* or metanaly* or metaanaly*).ti,ab.
241	((systematic* or evidence*) adj2 (review* or overview*)).ti,ab.
242	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
243	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
244	(search* adj4 literature).ab.
245	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
246	cochrane.jw.
247	or/238-246
248	randomized controlled trial.pt.
249	controlled clinical trial.pt.
250	pragmatic clinical trial.pt.
251	randomi#ed.ab.
252	placebo.ab.
253	randomly.ab.
254	Clinical Trials as topic.sh.
255	trial.ti.
256	or/248-255
257	exp EPIDEMIOLOGIC STUDIES/ or exp CLINICAL TRIAL/ or COMPARATIVE STUDY/
258	(control and study).mp.
259	program.mp.
260	or/257-259
261	exp Infant/ or Infant Health/ or Infant Welfare/
262	(prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,jn.
263	exp Child/ or exp Child Behavior/ or Child Health/ or Child Welfare/
264	Minors/
265	(child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,jn.
266	exp pediatrics/
267	(pediatric* or paediatric* or peadiatric*).ti,ab,in,jn.
268	Adolescent/ or Adolescent Behavior/ or Adolescent Health/
269	Puberty/
270	(adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,jn.
271	Schools/
272	Child Day Care Centers/ or exp Nurseries/ or Schools, Nursery/
273	(pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jn.
274	("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab.
275	or/261-274
276	237 and (247 or 256)
277	237 and 260 and 275
278	or/276-277

Databases: Embase; and Embase Classic

Date of last search: 05/01/2024

#	Searches
1	(head injury/ or exp brain injury/ or chronic brain disease/ or brain hemorrhage/ or brain hypoxia/ or exp brain tumor/ or brain disease/ or brain abscess/ or metabolic encephalopathy/ or cerebellum disease/ or exp cerebrovascular disease/ or encephalitis/ or hydrocephalus/) not (exp cerebrovascular accident/ or dementia/)
2	((brain* or cereb* or craniocereb* or cranial or intracrani* or neurocognit*) adj2 (injur* or trauma* or damage* or disease*1 or disorder* or infect* or h?emorrhag* or neoplasm* or cancer* or tumo?r* or insult* or impair* or ischemi* or infarcti* or hypoxi* or drown*)).ti,ab.
3	(chronic* adj1 trauma* adj2 encephalopath*).ti,ab.
4	((infratentorial* or supratentorial* or hypothalam* or pituitar* or choroid plexus) adj2 (neoplasm* or cancer* or tumo?r* or carcinom* or adenocarcinom*)).ti,ab.
5	(brain* adj2 abscess*).ti,ab.
6	(carotid arter* adj2 (disease* or injur*)).ti,ab.
7	("basal ganglia disease*" or encephalitis or meningoencephalitis or hydrocephal* or "paraneoplastic cereb* degenerat*" or "shak* baby syndrome*").ti,ab.
8	exp cerebrovascular accident/ and (adolescent/ or "minor (person)"/ or exp child/ or exp infant/ or pediatrics/ or exp pediatrics/ or exp puberty/)
9	(stroke? adj3 (p?ediatric* or child* or adolescen* or kid or kids or youth* or youngster* or minor or minors or underage* or under-age* or "under age*" or teen or teens or teenager* or juvenile* or boy or boys or boyhood or girl or girls or girlhood or schoolchild* or "school age*" or schoolage* or "under 16" or "under sixteen*")).ti,ab.
10	exp spinal cord injury/ or exp spinal cord tumor/ or epidural abscess/ or spinal cord disease/ or exp spinal cord vascular disease/ or spinal cord compression/ or transverse myelitis/
11	((spinal* or spine?) adj2 (injur* or trauma* or tumo?r* or neoplasm* or cancer* or infect* or insult* or disease? or disorder* or degenrat* or compress* or vascular* or ischemi* or ischaemi* or infarct* or h?emorrhag*)).ti,ab.
12	(Central cord syndrome* or transverse myelitis).ti,ab.
13	(epidural* adj2 (neoplasm* or cancer* or tumo?r* or abscess*)).ti,ab.
14	((spinal* or spine?) adj2 (viral* or virus* or polio* or acquired immunodeficiency syndrome or AIDS or HIV or bacterial* or neurosyphili* or neuro-syphili* or tubercul*)).ti,ab.
15	peripheral nerve injury/ or exp cranial nerve injury/ or peripheral nerve tumor/ or exp cranial nerve tumor/ or exp peripheral neuropathy/ or exp cranial neuropathy/
16	((periph* or cranial*) adj1 (nerve? or nervous system) adj2 (injur* or trauma* or disorder* or disease* or damage* or neoplasm* or cancer* or tumo?r* or inflamm* or autoimmun* or paraneoplastic* or neuropath* or syndrome?)).ti,ab.
17	(Guillain* adj1 Barr*).ti,ab.
18	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) adj1 nerve* adj1 injur*).ti,ab.
19	(optic* adj1 nerve* adj2 (neoplasm* or cancer* or tumo?r*)).ti,ab.
20	(brachial plexus adj1 (neuropath* or neuritis)).ti,ab.
21	(complex regional pain syndrome* or causalgia or mononeuropath* or nerve compression syndrome*).ti,ab.
22	((femoral or median or peroneal or radial or sciatic or tibial or ulnar) adj1 neuropath*).ti,ab.
23	((carpal-tunnel or piriformis-muscle or tarsal-tunnel or thoracic-outlet) adj1 syndrome*).ti,ab.
24	(pudendal neuralgia or polyneuropath* or polyradiculoneuropath* or polyradiculopath* or radiculopath*).ti,ab.
25	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) adj1 nerve* adj1 disease*).ti,ab.
26	(periph* adj2 neuropath*).ti,ab.
27	(((periph* or cranial*) adj2 (nerve? or nervous system)) and lupus).ti,ab.
28	((multi-focal* or multifocal*) adj2 motor adj1 neuropath*).ti,ab.
29	(((periph* or cranial*) adj2 (nerve? or nervous system)) and alcohol*).ti,ab.

#	Searches
30	exp motor neuron disease/ or postpoliomyelitis syndrome/ or exp parkinsonism/ or Duchenne muscular dystrophy/ or exp multiple sclerosis/ or neuromuscular disease/ or hereditary motor sensory neuropathy/ or Friedreich ataxia/ or exp Shy Drager syndrome/ or progressive supranuclear palsy/ or corticobasal degeneration/ or metachromatic leukodystrophy/ or exp mitochondrial myopathy/ or exp mucopolysaccharidosis/ or Williams Beuren syndrome/ or genetic disorder/ or Rett syndrome/ or fetal alcohol syndrome/ or dystonic disorder/ or hereditary motor sensory neuropathy/ or spinal dysraphism/
31	(neurolog* adj1 (condition* or disease* or damage* or disorder* or impair*)).ti,ab.
32	((motor-neuron* or gehrig* or charcott* or kennedy*) adj1 disease*).ti,ab.
33	((amyotroph* or primary) adj1 lateral* adj1 sclero*).ti,ab.
34	(bulbar adj1 pals*).ti,ab.
35	((muscular or muscle* or bulbo) adj1 atroph* adj1 spin*).ti,ab.
36	(progressiv* adj1 (muscular or muscle*) adj1 atroph*).ti,ab.
37	((postpolio* or post-polio*) adj1 syndrome?).ti,ab.
38	(Parkinson* or duchenne* or multiple scleros?s* or aphasia or creutzfeldt-jakob or huntington* or kluver-bucy).ti,ab.
39	(muscular adj1 dystroph*).ti,ab.
40	(neuromusc* adj1 (disease* or disorder?)).ti,ab.
41	(heredit* adj1 spastic* adj1 parapleg*).ti,ab.
42	"friedreich* ataxia*".ti,ab.
43	((multiple system or olivopontocerebellar) adj1 atroph*).ti,ab.
44	(shy-drager syndrome* or striatonigral degenerat* or batten* disease?).ti,ab.
45	(progressive adj1 supranuclear adj1 pals*).ti,ab.
46	(richardson* adj1 (disease? or syndrome?)).ti,ab.
47	((corticobasal or cortico basal) adj1 degenerat*).ti,ab.
48	(white adj1 matter adj1 disorder?).ti,ab.
49	(metachromatic leukodystroph* or mitochondrial myopath* or mucopolysaccharidos*).ti,ab.
50	(lysosomal adj1 storage adj1 disorder?).ti,ab.
51	((genetic or William* or catch-22 or rett* or congenital or f?etal alcohol) adj1 (syndrome or disorder*)).ti,ab.
52	(perinatal illness* or perinatal hypoxia*).ti,ab.
53	(primary adj1 dystonia?).ti,ab.
54	(heredit* adj1 motor* adj1 sens* adj1 neuropath*).ti,ab.
55	(spina bifida? or spinal dysraphism?).ti,ab.
56	motor dysfunction/ or motor dysfunction/ or conversion disorder/
57	((functional* or psychogenic* or dissociative*) adj1 neurologic* adj1 (disorder* or dysfunction* or difficult*)).ti,ab.
58	((movement* or motor* or convers*) adj1 (disorder* or dysfunct*)).ti,ab.
59	((psychogenic or dissociative or non-epilep* or nonepilep*) adj1 (seizure* or convulsion* or fit or fits or spasm* or attack*)).ti,ab.
60	(pseudo-seizure* or pseudoseizure*).ti,ab.
61	(medical* adj1 (unexplain* or un-explain*) adj1 symptom?).ti,ab.
62	or/1-61
63	(intervention* adj5 adapt* adj3 function*).ti,ab.
64	(function* adj3 task* adj3 train*).ti,ab.
65	TASK PERFORMANCE/ and rh.fs.
66	TASK PERFORMANCE/ and rehab*.ti,ab.
67	((task? or activit*) adj3 (analys* or pacing or pace? or break* or staging or staged or cue* or prompt*)).ti,ab.
68	ENERGY CONSERVATION/
69	(energ* adj3 conserv*).ti,ab.

#	Searches
70	((hierarch* or supervis*) adj3 prompt*).ti,ab.
71	coach*.ti,ab.
72	((repetitiv* or repeat* or practice? or practicing) adj3 (task? or skill?)).ti,ab.
73	((train* or retrain* or relearn*) adj3 (task? or skill?)).ti,ab.
74	PLAY THERAPY/
75	(play* adj3 (intervention* or therap*)).ti,ab.
76	(intervention* adj5 activit* adj3 daily living).ti,ab.
77	(intervention* adj5 everyday living).ti,ab.
78	(personal* adj5 activit* adj3 daily living).ti,ab.
79	(personal* adj3 care adj3 assist*).ti,ab.
80	(intervention* adj5 (wash* or dress* or groom* or bath* or toilet* or eat* or drink*)).ti,ab.
81	((grab or drop down) adj3 rail*).ti,ab.
82	TOILET SEAT/
83	BATHROOM EQUIPMENT/
84	(toilet adj3 (frame? or seat*)).ti,ab.
85	COMMODE/
86	commode?.ti,ab.
87	((bath* or shower*) adj3 (chair* or seat* or lift?)).ti,ab.
88	(wash* adj3 dry* adj3 toilet?).ti,ab.
89	((adapt* or sit*) adj3 (bath? or shower* or toilet*)).ti,ab.
90	((wash* or dress* or groom* or bath* or toilet* or eat* or drink*) adj3 aid?).ti,ab.
91	PERSONAL HYGIENE/
92	(personal* adj3 (hygien* or groom*)).ti,ab.
93	KITCHEN/
94	((adapt* or weight* or ergonomic* or large*) adj3 (cutlery or utensil? or spoon? or fork? or blade? or handle?)).ti,ab.
95	((feed* or food? or eat* or universal) adj3 (cuff? or strap?)).ti,ab.
96	(splayd? or sporf? or spork?).ti,ab.
97	((nonslip* or antislip* or slip* or grip*) adj3 mat?).ti,ab.
98	((plate? or crockery) adj3 (warm* or guard* or adapt*)).ti,ab.
99	((assist* or self) adj3 (eat* or feed*) adj3 device?).ti,ab.
100	(mobile adj3 arm? adj3 support*).ti,ab.
101	Neater-Eater.ti,ab.
102	((adapt* or ergonomic*) adj3 (cup? or bottle? or drink*)).ti,ab.
103	((angle? or handle? or spill*) adj3 (cup? or spout?)).ti,ab.
104	((adapt* or ergonomic* or one way or Pat Saunder*) adj3 straw?).ti,ab.
105	(extended adj5 activit* adj3 daily living).ti,ab.
106	(domestic* adj5 activit* adj3 daily living).ti,ab.
107	(intervention* adj5 (domestic* or communit* or housework* or shop* or cook* or clean* or (house* adj3 manag*))).ti,ab.
108	((domestic* or communit* or house* or shop* or cook* or clean*) adj3 aid?).ti,ab.
109	((live? or living or complet*) adj3 independen*).ti,ab.
110	INDEPENDENT LIVING/
111	((live? or living or complet*) adj3 independen*).ti,ab.
112	COMMUNITY LIVING/
113	(communit* adj3 living adj3 skill?).ti,ab.
114	*SELF CARE/
115	(self adj3 (manag* or care)).ti,ab.

#	Searches
116	TIME MANAGEMENT/
117	(time adj3 manag*).ti,ab.
118	(intervention* adj3 (orientat* or organis* or executive)).ti,ab.
119	((orientat* or organis* or executive) adj3 skill?).ti,ab.
120	CAR DRIVING/
121	((intervention* or aid? or help* or skill?) adj3 (drive or driving or car or cars or transport* or bus or buses or tram? or train?)).ti,ab.
122	((car or cars or vehicle?) adj3 adapt*).ti,ab.
123	(intervention? adj3 functional mobility).ti,ab.
124	exp *WHEELCHAIR/
125	(wheelchair? or wheel chair?).ti,ab.
126	CANE/
127	exp WALKER/
128	exp CRUTCH/
129	((walk* or ambulat*) adj3 (aid? or stick? or cane? or frame?)).ti,ab.
130	((gutter or pulpit or delta) adj3 frame?).ti,ab.
131	STANDING FRAME/
132	(stand* adj3 (frame? or aid*)).ti,ab.
133	exp *ORTHOSIS/
134	ATHLETIC TAPE/
135	(orthos?s or orthotic).ti,ab.
136	(mobile adj3 support?).ti,ab.
137	((ankle? or leg?) adj3 (brace? or bracing)).ti,ab.
138	(push adj3 (brace? or bracing or aequi)).ti,ab.
139	(full* adj3 length* adj3 caliper?).ti,ab.
140	(leg? adj3 caliper?).ti,ab.
141	strapp*.ti,ab.
142	taping.ti,ab.
143	((intervention? or equipment or device?) adj5 support* adj3 function*).ti,ab.
144	((intervention? or equipment or device?) adj5 modif* adj3 environment*).ti,ab.
145	(tech* adj3 intervention?).ti,ab.
146	*TELEMEDICINE/
147	*TELEREHABILITATION/
148	((tele* or virtual) adj3 (health* or medicine or rehab*)).ti,ab.
149	(telehealth* or tele-health* or telemedicine or tele-medicine or telerehab* or tele-rehab* or virtualhealth* or virtual-health* or virtualmedicine or virtual-medicine or virtualrehab* or virtual-rehab*).ti,ab.
150	((phone? or smartphone? or app? or tablet? or web or internet or computer* or online) adj3 (medicine or rehab*)).ti,ab.
151	(interact* adj3 health* adj3 monitor*).ti,ab.
152	exp SELF HELP DEVICE/
153	(assist* adj3 (device? or technolog*)).ti,ab.
154	((self help or selfhelp) adj3 (device? or technolog* or aid?)).ti,ab.
155	(environment* adj3 control* adj5 (device? or technolog* or intervention?)).ti,ab.
156	((adapt* or modif*) adj3 (device? or technolog* or equipment)).ti,ab.
157	((adapt* or modif*) adj3 (light* or lamp? or fan? or door? or curtain? or window? or grip? or handle? or intercom? or alarm? or pager?)).ti,ab.
158	exp COMMUNICATION AID/
159	COMPUTER INTERFACE/

#	Searches
160	AMBIENT INTELLIGENCE/
161	AUTOMATIC SPEECH RECOGNITION/
162	EYE-TRACKING TECHNOLOGY/
163	AUGMENTATIVE COMMUNICATION SYSTEM/
164	COMMUNICATION AID/
165	COMMUNICATION BOARD/
166	(communicat* adj3 (aid? or board?)).ti,ab.
167	(comput* adj3 interfac*).ti,ab.
168	(input adj3 device?).ti,ab.
169	((ambient* or alternativ* or augment*) adj3 tech*).ti,ab.
170	((voice? or speech* or speak*) adj3 recog* adj3 (software or technolog* or device?)).ti,ab.
171	(eye? adj3 (gaze? or gazing or track*) adj3 (software or technolog* or device?)).ti,ab.
172	((blink* or tilt* or resist* or suck* or puff*) adj3 (switch* or button*)).ti,ab.
173	(keyboard? or joystick? or roller ball?).ti,ab.
174	(mouse adj3 (computer* or tracking)).ti,ab.
175	PATIENT POSITIONING/
176	BODY POSITION/ and rh.fs.
177	BODY POSITION/ and rehab*.ti,ab.
178	((position* or postur*) adj3 (manag* or therap* or rehab*)).ti,ab.
179	((twenty four or "24") adj3 (hour? or "h" or "hr") adj5 (postur* or position*)).ti,ab.
180	(("24h" or "24hr") adj5 (postur* or position*)).ti,ab.
181	(sleep* adj3 system?).ti,ab.
182	((carved or mould*or modul* or adapt* or bespoke or system? or special*) adj3 seat*).ti,ab.
183	(backrest? or back rest?).ti,ab.
184	((seat* or sit*) adj3 wedge?).ti,ab.
185	(cushion? or cushioning).ti,ab.
186	((lateral* or lumbar) adj3 support*).ti,ab.
187	((rise* or rising or riser or reclin* or electr* or immers* or comf* or tilt*) adj3 (chair* or arm-chair?)).ti,ab.
188	WEARABLE COMPUTER/
189	(wear* adj3 (tech* or device?)).ti,ab.
190	((wear* or worn or cloth* or strap* or armband? or waistband? or shorts or trousers or splint*) adj5 (neuromuscular* or function* or electric* or stimulat* or NMES or FES)).ti,ab.
191	exp NEUROPROSTHESIS/
192	((neural or neuro) adj3 prosthe*).ti,ab.
193	(neuralprosthe* or neuroprosthe*).ti,ab.
194	MOLLII.ti,ab.
195	exp *"EXOSKELETON (REHABILITATION)"/
196	(robot* adj5 (gait or lower limb* or lower extremit* or ortho* or train*)).ti,ab.
197	(exoskeleton* or exo-skeleton*).ti,ab.
198	((EKSO or Rex) adj3 bionic*).ti,ab.
199	(rewalk or Indego).ti,ab.
200	((intervention? or device?) adj5 upper adj3 (limb? or extremit*)).ti,ab.
201	((intervention? or device?) adj5 arm?).ti,ab.
202	UPPER LIMB ORTHOSIS/
203	(saebo adj3 (reach or glove or flex)).ti,ab.
204	(upper adj3 (limb? or extremit*) adj3 splint*).ti,ab.
205	(arm? adj3 splint*).ti,ab.

#	Searches
206	((dynamic or extension or working) adj3 splint*).ti,ab.
207	(intervention* adj5 (sustain* or improv* or capab*) adj3 (eat* or drink* or swallow*)).ti,ab.
208	((diet* or food* or fluid?) adj3 modif*).ti,ab.
209	((food* or fluid?) adj5 (thicken* or consistenc*)).ti,ab.
210	((swallow* or deglutition or inglutition or dysphagia) adj3 (train* or retrain* or re-train* or manag* or therap* or rehab* or exercis* or manoeuvre? or program*)).ti,ab.
211	(ELECTROSTIMULATION/ or ELECTROTHERAPY/ or TRANSCRANIAL DIRECT CURRENT STIMULATION/ or exp TRANSCRANIAL MAGNETIC STIMULATION/) and (SWALLOWING/ or DYSPHAGIA/)
212	((electric* or direct current or magnetic) adj3 stimulat* adj5 (swallow* or deglutition or inglutition or dysphagia)).ti,ab.
213	(pharyngeal adj3 stimulat*).ti,ab.
214	*ENTERIC FEEDING/
215	exp DIGESTIVE TRACT INTUBATION/
216	GASTROSTOMY/
217	JEJUNOSTOMY/
218	((enteral* or tube?) adj3 (nutrition* or feed* or fed*)).ti,ab.
219	((nasogastric* or gastrointestinal*) adj3 (tube? or intubat* or nutrition* or feed* or fed*)).ti,ab.
220	gastrostom*.ti,ab.
221	jejunostom*.ti,ab.
222	DAILY LIFE ACTIVITY/ and (REHABILITATION/ or NEUROREHABILITATION/)
223	DAILY LIFE ACTIVITY/ and rehab*.ti.
224	or/63-223
225	62 and 224
226	letter.pt. or letter/
227	note.pt.
228	editorial.pt.
229	case report/ or case study/
230	(letter or comment*).ti.
231	or/226-230
232	randomized controlled trial/ or random*.ti,ab.
233	231 not 232
234	animal/ not human/
235	nonhuman/
236	exp Animal Experiment/
237	exp Experimental Animal/
238	animal model/
239	exp Rodent/
240	(rat or rats or rodent* or mouse or mice).ti.
241	or/233-240
242	225 not 241
243	limit 242 to english language
244	limit 243 to yr="2013 -Current"
245	systematic review/
246	meta-analysis/
247	(meta analy* or metanaly* or metaanaly*).ti,ab.
248	((systematic or evidence) adj2 (review* or overview*)).ti,ab.
249	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.

#	Searches
250	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
251	(search* adj4 literature).ab.
252	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
253	((pool* or combined) adj2 (data or trials or studies or results)).ab.
254	cochrane.jw.
255	or/245-254
256	random*.ti,ab.
257	factorial*.ti,ab.
258	(crossover* or cross over*).ti,ab.
259	((doubl* or singl*) adj blind*).ti,ab.
260	(assign* or allocat* or volunteer* or placebo*).ti,ab.
261	crossover procedure/
262	single blind procedure/
263	randomized controlled trial/
264	double blind procedure/
265	or/256-264
266	EPIDEMIOLOGY/ or CONTROLLED STUDY/ or exp CASE CONTROL STUDY/ or PROSPECTIVE STUDY/ or RETROSPECTIVE STUDY/ or COHORT ANALYSIS/ or FOLLOW UP/ or CROSS-SECTIONAL STUDY/ or exp CLINICAL TRIAL/ or COMPARATIVE STUDY/
267	(control and study).mp.
268	program.mp.
269	or/266-268
270	exp juvenile/ or Child Behavior/ or Child Welfare/ or Child Health/ or infant welfare/ or "minor (person)"/ or elementary student/
271	(prematur* or pre-matur* or preterm* or pre-term* or infan* or newborn* or new-born* or perinat* or peri-nat* or neonat* or neo-nat* or baby* or babies or toddler*).ti,ab,in,ad,jw.
272	(child* or minor or minors or boy* or girl* or kid or kids or young*).ti,ab,in,ad,jw.
273	exp pediatrics/
274	(pediatric* or paediatric* or peadiatric*).ti,ab,in,ad,jw.
275	exp adolescence/ or exp adolescent behavior/ or adolescent health/ or high school student/ or middle school student/
276	(adolescen* or pubescen* or prepubescen* or pre-pubescen* or pubert* or prepubert* or pre-pubert* or teen* or preteen* or pre-teen* or juvenil* or youth* or under*age*).ti,ab,in,ad,jw.
277	school/ or high school/ or kindergarten/ or middle school/ or primary school/ or nursery school/ or day care/
278	(pre-school* or preschool* or kindergar* or daycare or day-care or nurser* or school* or pupil* or student*).ti,ab,jw.
279	("under 18*" or "under eighteen*" or "under 25*" or "under twenty five*").ti,ab.
280	or/270-279
281	244 and (255 or 265)
282	244 and 269 and 280
283	or/281-282
284	(conference abstract* or conference review or conference paper or conference proceeding).db,pt,su.
285	283 not 284

Databases: Cochrane Central Register of Controlled Trials; and Cochrane Database of Systematic Reviews

Date of last search: 05/01/2024

#	Searches
#1	MeSH descriptor: [Craniocerebral Trauma] this term only
#2	MeSH descriptor: [Brain Injuries] this term only
#3	MeSH descriptor: [Brain Hemorrhage, Traumatic] explode all trees
#4	MeSH descriptor: [Brain Injuries, Diffuse] explode all trees
#5	MeSH descriptor: [Brain Injuries, Traumatic] explode all trees
#6	MeSH descriptor: [Brain Injury, Chronic] explode all trees
#7	MeSH descriptor: [Shaken Baby Syndrome] this term only
#8	MeSH descriptor: [Brain Damage, Chronic] this term only
#9	MeSH descriptor: [Hypoxia, Brain] this term only
#10	MeSH descriptor: [Intracranial Hemorrhage, Traumatic] explode all trees
#11	MeSH descriptor: [Brain Neoplasms] explode all trees
#12	MeSH descriptor: [Brain Diseases] this term only
#13	MeSH descriptor: [Brain Abscess] this term only
#14	MeSH descriptor: [Brain Diseases, Metabolic] this term only
#15	MeSH descriptor: [Cerebellar Diseases] this term only
#16	MeSH descriptor: [Cerebrovascular Disorders] this term only
#17	MeSH descriptor: [Basal Ganglia Cerebrovascular Disease] this term only
#18	MeSH descriptor: [Cerebrovascular Trauma] this term only
#19	MeSH descriptor: [Intracranial Arteriovenous Malformations] this term only
#20	MeSH descriptor: [Intracranial Embolism and Thrombosis] this term only
#21	MeSH descriptor: [Intracranial Hemorrhages] this term only
#22	MeSH descriptor: [Vascular Headaches] this term only
#23	MeSH descriptor: [Encephalitis] this term only
#24	MeSH descriptor: [Hydrocephalus] this term only
#25	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24
#26	MeSH descriptor: [Stroke] explode all trees
#27	MeSH descriptor: [Dementia] this term only
#28	#26 or #27
#29	#25 NOT #28
#30	((brain* or cereb* or craniocereb* or cranial or intracrani* or neurocognit*) NEAR/2 (injur* or trauma* or damage* or disease* or diseases* or disorder* or infect* or hemorrhag* or haemorrhag* or neoplasm* or cancer* or tumour* or tumor* or insult* or impair* or is-chemi* or ischaemi* or infarcti* or hypoxi* or drown*)):ti,ab
#31	(chronic* NEAR/1 trauma* NEAR/2 encephalopath*):ti,ab
#32	((infratentorial* or supratentorial* or hypothalam* or pituitar* or "choroid plexus") NEAR/2 (neoplasm* or cancer* or tumour* or tumor* or carcinom* or adenocarcinom*)):ti,ab
#33	(brain* NEAR/2 abscess*):ti,ab
#34	(carotid arter* NEAR/2 (disease* or injur*)):ti,ab
#35	(("basal ganglia" next disease*) or encephalitis or meningoencephalitis or hydrocephal* or "paraneoplastic cerebellar" next degenerat* or "shaken baby" next syndrome* or "shaking baby" next syndrome*):ti,ab
#36	MeSH descriptor: [Stroke] explode all trees
#37	MeSH descriptor: [Adolescent] this term only
#38	MeSH descriptor: [Minors] this term only
#39	MeSH descriptor: [Child] explode all trees
#40	MeSH descriptor: [Infant] explode all trees
#41	MeSH descriptor: [Pediatrics] explode all trees
#42	MeSH descriptor: [Puberty] explode all trees

#	Searches
#43	#37 or #38 or #39 or #40 or #41 or #42
#44	#36 and #43
#45	((stroke or strokes) NEAR/3 (paediatric* or pediatric* or child* or adolescen* or kid or kids or youth* or youngster* or minor or minors or underage* or "under age" or "under ages" or "under aged" or teen or teens or teenager* or juvenile* or boy or boys or boyhood or girl or girls or girlhood or schoolchild* or "school ages" or "school age" or "school aged" or schoolage* or "under 16" or "under sixteen" or "under sixteens")):ti,ab
#46	MeSH descriptor: [Spinal Cord Injuries] explode all trees
#47	MeSH descriptor: [Spinal Cord Neoplasms] explode all trees
#48	MeSH descriptor: [Epidural Abscess] this term only
#49	MeSH descriptor: [Spinal Cord Diseases] this term only
#50	MeSH descriptor: [Spinal Cord Vascular Diseases] explode all trees
#51	MeSH descriptor: [Spinal Cord Compression] this term only
#52	MeSH descriptor: [Myelitis, Transverse] this term only
#53	((spinal* or spine or spines) NEAR/2 (injur* or trauma* or tumour* or tumor* or neoplasm* or cancer* or infect* or insult* or disease or diseases or disorder* or degenrat* or compress* or vascular* or ischemi* or ischaemi* or infarct* or hemorrhag* or haemorrhag*)):ti,ab
#54	("Central cord" next syndrome* or "transverse myelitis"):ti,ab
#55	(epidural* NEAR/2 (neoplasm* or cancer* or tumour* or tumor* or abscess*)):ti,ab
#56	((spinal* or spine or spines) NEAR/2 (viral* or virus* or polio* or "acquired immunodeficiency syndrome" or AIDS or HIV or bacterial* or neurosyphili* or neuro next syphili* or tubercul*)):ti,ab
#57	MeSH descriptor: [Peripheral Nerve Injuries] this term only
#58	MeSH descriptor: [Cranial Nerve Injuries] explode all trees
#59	MeSH descriptor: [Peripheral Nervous System Neoplasms] this term only
#60	MeSH descriptor: [Cranial Nerve Neoplasms] explode all trees
#61	MeSH descriptor: [Peripheral Nervous System Diseases] explode all trees
#62	MeSH descriptor: [Cranial Nerve Diseases] explode all trees
#63	((periph* or cranial*) NEAR/1 (nerve or nerves or "nervous system") NEAR/2 (injur* or trauma* or disorder* or disease* or damage* or neoplasm* or cancer* or tumour* or tumor* or inflamm* or autoimmun* or paraneoplastic* or neuropath* or syndrome*)):ti,ab
#64	(Guillain* NEAR/1 Barr*):ti,ab
#65	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or "ocular motility" or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) NEAR/1 nerve* NEAR/1 injur*):ti,ab
#66	(optic* NEAR/1 nerve* NEAR/2 (neoplasm* or cancer* or tumour* or tumor*)):ti,ab
#67	(brachial next plexus NEAR/1 (neuropath* or neuritis)):ti,ab
#68	("complex regional pain" next syndrome* or causalgia or mononeuropath* or "nerve compression" next syndrome*):ti,ab
#69	((femoral or median or peroneal or radial or sciatic or tibial or ulnar) NEAR/1 neuropath*):ti,ab
#70	((carpal next tunnel or piriformis next muscle or tarsal next tunnel or thoracic next outlet) NEAR/1 syndrome*):ti,ab
#71	((pudendal next neuralgia) or polyneuropath* or polyradiculoneuropath* or polyradiculopath* or radiculopath*):ti,ab
#72	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or "ocular motility" or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) NEAR/1 nerve* NEAR/1 disease*):ti,ab
#73	(periph* NEAR/2 neuropath*):ti,ab
#74	(((periph* or cranial*) NEAR/2 (nerve or nerves or "nervous system")) and lupus):ti,ab
#75	((multi next focal* or multifocal*) NEAR/2 motor NEAR/1 neuropath*):ti,ab
#76	(((periph* or cranial*) NEAR/2 (nerve or nerves or nervous system)) and alcohol*):ti,ab

#	Searches
#77	#29 or #30 or #31 or #32 or #33 or #34 or #35 or #44 or #45 or #46 or #47 or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68 or #69 or #70 or #71 or #72 or #73 or #74 or #75 or #76
#78	MeSH descriptor: [Motor Neuron Disease] explode all trees
#79	MeSH descriptor: [Postpoliomyelitis Syndrome] this term only
#80	MeSH descriptor: [Parkinsonian Disorders] explode all trees
#81	MeSH descriptor: [Muscular Dystrophy, Duchenne] this term only
#82	MeSH descriptor: [Multiple Sclerosis] explode all trees
#83	MeSH descriptor: [Neuromuscular Diseases] this term only
#84	MeSH descriptor: [Spastic Paraplegia, Hereditary] this term only
#85	MeSH descriptor: [Friedreich Ataxia] this term only
#86	MeSH descriptor: [Multiple System Atrophy] explode all trees
#87	MeSH descriptor: [Supranuclear Palsy, Progressive] this term only
#88	MeSH descriptor: [Corticobasal Degeneration] explode all trees
#89	MeSH descriptor: [Leukodystrophy, Metachromatic] this term only
#90	MeSH descriptor: [Mitochondrial Myopathies] explode all trees
#91	MeSH descriptor: [Mucopolysaccharidoses] explode all trees
#92	MeSH descriptor: [Williams Syndrome] this term only
#93	MeSH descriptor: [Genetic Diseases, Inborn] this term only
#94	MeSH descriptor: [Rett Syndrome] this term only
#95	MeSH descriptor: [Fetal Alcohol Spectrum Disorders] this term only
#96	MeSH descriptor: [Dystonic Disorders] this term only
#97	MeSH descriptor: [Hereditary Sensory and Motor Neuropathy] this term only
#98	MeSH descriptor: [Spinal Dysraphism] this term only
#99	(neurolog* NEAR/1 (condition* or disease* or damage* or disorder* or impair*)):ti,ab
#100	((motor next neuron* or gehrig* or charcott* or kennedy*) NEAR/1 disease*):ti,ab
#101	((amyotroph* or primary) NEAR/1 lateral* NEAR/1 sclero*):ti,ab
#102	(bulbar NEAR/1 pals*):ti,ab
#103	((muscular or muscle* or bulbo) NEAR/1 atroph* NEAR/1 spin*):ti,ab
#104	(progressiv* NEAR/1 (muscular or muscle*) NEAR/1 atroph*):ti,ab
#105	((postpolio* or post next polio*) NEAR/1 (syndrome*)):ti,ab
#106	(Parkinson* or duchenne* or multiple next scleros* or sclerosos* or aphasia or creutzfeldt next jakob or huntington* or kluver next bucy):ti,ab
#107	(muscular NEAR/1 dystroph*):ti,ab
#108	((neurolog*) near/1 (condition* or disease* or damage* or disorder* or impair*)):ti,ab
#109	(heredit* NEAR/1 spastic* NEAR/1 parapleg*):ti,ab
#110	(friedreich* next ataxia*):ti,ab
#111	(("multiple system" or olivopontocerebellar) NEAR/1 atroph*):ti,ab
#112	((shy next drager next syndrome*) or striatonigral next degenerat* or batten next disease*):ti,ab
#113	(progressive NEAR/1 supranuclear NEAR/1 pals*):ti,ab
#114	(richardson* NEAR/1 (disease* or syndrome*)):ti,ab
#115	((corticobasal or "cortico basal") NEAR/1 degenerat*):ti,ab
#116	("white matter" NEAR/1 (disorder*)):ti,ab
#117	(metachromatic next leukodystroph* or mitochondrial next myopath* or mucopolysaccharidos*):ti,ab
#118	(lysosomal NEAR/1 storage NEAR/1 disorder*):ti,ab
#119	((genetic or William* or "catch-22" or rett* or congenital or fetal or "foetal alcohol") NEAR/1 (syndrome* or disorder*)):ti,ab

#	Searches
#120	(perinatal NEAR/1 (illness* or hypoxia*)):ti,ab
#121	(primary NEAR/1 (dystonia or dystonias)):ti,ab
#122	(heredit* NEAR/1 motor* NEAR/1 sens* NEAR/1 neuropath*):ti,ab
#123	(spina next (bifida or bifidas) or spinal next (dysraphism or dysraphisms)):ti,ab
#124	MeSH descriptor: [Movement Disorders] this term only
#125	MeSH descriptor: [Motor Disorders] this term only
#126	MeSH descriptor: [Conversion Disorder] this term only
#127	((functional* or psychogenic* or dissociative*) NEAR/1 neurologic* NEAR/1 (disorder* or dysfunction* or difficult*)):ti,ab
#128	((movement* or motor* or convers*) NEAR/1 (disorder* or dysfunct*)):ti,ab
#129	((psychogenic or dissociative or non-epilep* or nonepilep*) NEAR/1 (seizure* or convulsion* or fit or fits or spasm* or attack*)):ti,ab
#130	(pseudo next seizure or pseudoseizure):ti,ab
#131	(medical* NEAR/1 (unexplain* or un next explain*) NEAR/1 (symptom*)):ti,ab
#132	#77 or #78 or #79 or #80 or #81 or #82 or #83 or #84 or #85 or #86 or #87 or #88 or #89 or #90 or #91 or #92 or #93 or #94 or #95 or #96 or #97 or #98 or #99 or #100 or #101 or #102 or #103 or #104 or #105 or #106 or #107 or #108 or #109 or #110 or #111 or #112 or #113 or #114 or #115 or #116 or #117 or #118 or #119 or #120 or #121 or #122 or #123 or #124 or #125 or #126 or #127 or #128 or #129 or #130 or #131
#133	(intervention* near/5 adapt* near/3 function*):ti,ab
#134	(function* near/3 task* near/3 train*):ti,ab
#135	MeSH descriptor: [Task Performance and Analysis] this term only
#136	MeSH descriptor: [] explode all trees and with qualifier(s): [rehabilitation - RH]
#137	#135 and #136
#138	rehab*:ti,ab
#139	#135 and #138
#140	((task* or activit*) near/3 (analys* or pacing or pace* or break* or staging or staged or cue* or prompt*)):ti,ab
#141	(energ* near/3 conserv*):ti,ab
#142	((hierarch* or supervis*) near/3 prompt*):ti,ab
#143	coach*:ti,ab
#144	((repetitiv* or repeat* or practice* or practicing) near/3 (task* or skill*)):ti,ab
#145	((train* or retrain* or relearn*) near/3 (task* or skill*)):ti,ab
#146	MeSH descriptor: [Play Therapy] this term only
#147	(play* near/3 (intervention* or therap*)):ti,ab
#148	(intervention* near/5 activit* near/3 "daily living"):ti,ab
#149	(intervention* near/5 "everyday living"):ti,ab
#150	(personal* near/5 activit* near/3 "daily living"):ti,ab
#151	(personal* near/3 care near/3 assist*):ti,ab
#152	(intervention* near/5 (wash* or dress* or groom* or bath* or toilet* or eat* or drink*)):ti,ab
#153	((grab or "drop down") near/3 rail*):ti,ab
#154	(toilet near/3 (frame* or seat*)):ti,ab
#155	commode*:ti,ab
#156	((bath* or shower*) near/3 (chair* or seat* or lift or lifts)):ti,ab
#157	(wash* near/3 dry* near/3 toilet*):ti,ab
#158	((adapt* or sit*) near/3 (bath or baths or shower* or toilet*)):ti,ab
#159	((wash* or dress* or groom* or bath* or toilet* or eat* or drink*) near/3 (aid or aids)):ti,ab
#160	(personal* near/3 (hygien* or groom*)):ti,ab
#161	MeSH descriptor: [Cooking and Eating Utensils] this term only

#	Searches
#162	((adapt* or weight* or ergonomic* or large*) near/3 (cutlery or utensil* or spoon* or fork* or blade* or handle*)):ti,ab
#163	((feed* or food* or eat* or universal) near/3 (cuff or cuffs or strap or straps)):ti,ab
#164	(splayd* or sporf* or spork*):ti,ab
#165	((nonslip* or antislip* or slip* or grip*) near/3 (mat or mats)):ti,ab
#166	((plate* or crockery) near/3 (warm* or guard* or adapt*)):ti,ab
#167	((assist* or self) near/3 (eat* or feed*) near/3 device*):ti,ab
#168	(mobile near/3 (arm or arms) near/3 support*):ti,ab
#169	("Neater Eater" or "Neater-Eater"):ti,ab
#170	((adapt* or ergonomic*) near/3 (cup or cups or bottle* or drink*)):ti,ab
#171	((angle* or handle* or spill*) near/3 (cup or cups or spout*)):ti,ab
#172	((adapt* or ergonomic* or one way or "Pat Saunder" or "Pat Saunders") near/3 straw*):ti,ab
#173	(extended near/5 activit* near/3 "daily living"):ti,ab
#174	(domestic* near/5 activit* near/3 "daily living"):ti,ab
#175	(intervention* near/5 (domestic* or communit* or housework* or shop* or cook* or clean* or (house* near/3 manag*))):ti,ab
#176	((domestic* or communit* or house* or shop* or cook* or clean*) near/3 (aid or aids)):ti,ab
#177	((live* or living or complet*) near/3 independen*):ti,ab
#178	(communit* near/3 living near/3 skill*):ti,ab
#179	MeSH descriptor: [Self-Management] this term only
#180	MeSH descriptor: [Self Care] this term only
#181	(self near/3 (manag* or care)):ti,ab
#182	MeSH descriptor: [Time Management] this term only
#183	(time near/3 manag*):ti,ab
#184	(intervention* near/3 (orientat* or organis* or executive)):ti,ab
#185	((orientat* or organis* or executive) near/3 skill*):ti,ab
#186	MeSH descriptor: [Automobile Driving] this term only
#187	((intervention* or aid or aids or help* or skill*) near/3 (drive or driving or car or cars or transport* or bus or buses or tram or trams or train or trains)):ti,ab
#188	((car or cars or vehicle*) near/3 adapt*):ti,ab
#189	(intervention* near/3 "functional mobility"):ti,ab
#190	MeSH descriptor: [Wheelchairs] this term only
#191	(wheelchair* or "wheel chair" or "wheel chairs"):ti,ab
#192	MeSH descriptor: [Canes] this term only
#193	MeSH descriptor: [Walkers] this term only
#194	MeSH descriptor: [Crutches] this term only
#195	((walk* or ambulat*) near/3 (aid or aids or stick or sticks or cane* or frame*)):ti,ab
#196	((gutter or pulpit or delta) near/3 frame*):ti,ab
#197	(stand* near/3 (frame* or aid*)):ti,ab
#198	MeSH descriptor: [Orthotic Devices] this term only
#199	MeSH descriptor: [Foot Orthoses] this term only
#200	MeSH descriptor: [Braces] this term only
#201	MeSH descriptor: [Athletic Tape] this term only
#202	(orthoses or orthosis or orthotic):ti,ab
#203	(mobile near/3 (support or supports)):ti,ab
#204	((ankle* or leg or legs) near/3 (brace* or bracing)):ti,ab
#205	(push near/3 (brace* or bracing or aequi)):ti,ab
#206	(full* near/3 length* near/3 caliper*):ti,ab

#	Searches
#207	((leg or legs) near/3 caliper*):ti,ab
#208	strapp*:ti,ab
#209	taping:ti,ab
#210	((intervention* or equipment or device*) near/5 support* near/3 function*):ti,ab
#211	((intervention* or equipment or device*) near/5 modif* near/3 environment*):ti,ab
#212	(tech* near/3 intervention*):ti,ab
#213	MeSH descriptor: [Telemedicine] this term only
#214	MeSH descriptor: [Telerehabilitation] this term only
#215	((tele* or virtual) near/3 (health* or medicine or rehab*)):ti,ab
#216	(telehealth* or tele-health* or telemedicine or tele-medicine or telerehab* or tele-rehab* or virtualhealth* or virtual-health* or virtualmedicine or virtual-medicine or virtualrehab* or virtual-rehab*).ti,ab.
#217	((phone* or smartphone* or app or apps or tablet* or web or internet or computer* or online) near/3 (medicine or rehab*)):ti,ab
#218	(interact* near/3 health* near/3 monitor*):ti,ab
#219	MeSH descriptor: [Self-Help Devices] this term only
#220	(assist* near/3 (device* or technolog*)):ti,ab
#221	(("self help" or selfhelp) near/3 (device* or technolog* or aid or aids)):ti,ab
#222	(environment* near/3 control* near/5 (device* or technolog* or intervention*)):ti,ab
#223	((adapt* or modif*) near/3 (device* or technolog* or equipment)):ti,ab
#224	((adapt* or modif*) near/3 (light* or lamp* or fan or fans or door* or curtain* or window* or grip or grips or handle* or intercom* or alarm* or pager*)):ti,ab
#225	MeSH descriptor: [Communication Aids for Disabled] this term only
#226	MeSH descriptor: [User-Computer Interface] this term only
#227	MeSH descriptor: [Ambient Intelligence] this term only
#228	MeSH descriptor: [Speech Recognition Software] this term only
#229	MeSH descriptor: [Eye-Tracking Technology] this term only
#230	(communicat* near/3 (aid or aids or board or boards)):ti,ab
#231	(comput* near/3 interfac*):ti,ab
#232	(input near/3 device*):ti,ab
#233	((ambient* or alternativ* or augment*) near/3 tech*):ti,ab
#234	((voice* or speech* or speak*) near/3 recog* near/3 (software or technolog* or device*)):ti,ab
#235	(eye* near/3 (gaze* or gazing or track*) near/3 (software or technolog* or device*)):ti,ab
#236	((blink* or tilt* or resist* or suck* or puff*) near/3 (switch* or button*)):ti,ab
#237	(keyboard* or joystick* or "roller ball" or "roller balls"):ti,ab
#238	(mouse near/3 (computer* or tracking)):ti,ab
#239	MeSH descriptor: [Patient Positioning] this term only
#240	MeSH descriptor: [Posture] this term only
#241	MeSH descriptor: [] explode all trees and with qualifier(s): [rehabilitation - RH]
#242	#240 and #241
#243	rehab*:ti,ab
#244	#240 and #243
#245	((position* or postur*) near/3 (manag* or therap* or rehab*)):ti,ab
#246	(("twenty four" or "24") near/3 (hour* or "h" or "hr") near/5 (postur* or position*)):ti,ab
#247	(("24h" or "24hr") near/5 (postur* or position*)):ti,ab
#248	(sleep* near/3 (system or systems)):ti,ab
#249	((carved or mould*or modul* or adapt* or bespoke or system or systems or special*) near/3 seat*):ti,ab
#250	(backrest* or "back rest" or "back rests"):ti,ab

#	Searches
#251	((seat* or sit*) near/3 wedge*):ti,ab
#252	(cushion or cushions or cushioning):ti,ab
#253	((lateral* or lumbar) near/3 support*):ti,ab
#254	((rise* or rising or riser or reclin* or electr* or immers* or comf* or tilt*) near/3 (chair* or armchair*)):ti,ab
#255	MeSH descriptor: [Wearable Electronic Devices] this term only
#256	(wear* near/3 (tech* or device*)):ti,ab
#257	((wear* or worn or cloth* or strap* or armband* or waistband* or shorts or trousers or splint*) near/5 (neuromuscular* or function* or electric* or stimulat* or NMES or FES)):ti,ab
#258	MeSH descriptor: [Neural Prostheses] this term only
#259	((neural or neuro) near/3 prosthe*):ti,ab
#260	(neuralprosthe* or neuroprosthe*):ti,ab
#261	MOLLII:ti,ab
#262	MeSH descriptor: [Robotics] this term only
#263	MeSH descriptor: [Gait] this term only
#264	MeSH descriptor: [Orthotic Devices] this term only
#265	#263 or #264
#266	#262 and #265
#267	MeSH descriptor: [Exoskeleton Device] this term only
#268	(robot* near/5 (gait or "lower limb" or "lower limbs" or "lower extremity" or "lower extremities" or ortho* or train*)):ti,ab
#269	(exoskeleton* or "exo-skeleton" or "exo-skeletons"):ti,ab
#270	((EKSO or Rex) near/3 bionic*):ti,ab
#271	(rewalk or Indego):ti,ab
#272	((intervention* or device*) near/5 upper near/3 (limb* or extremit*)):ti,ab
#273	((intervention* or device*) near/5 (arm or arms)):ti,ab
#274	(saebo near/3 (reach or glove or flex)):ti,ab
#275	(upper near/3 (limb* or extremit*) near/3 splint*):ti,ab
#276	((arm or arms) near/3 splint*):ti,ab
#277	((dynamic or extension or working) near/3 splint*):ti,ab
#278	(intervention* near/5 (sustain* or improv* or capab*) near/3 (eat* or drink* or swallow*)):ti,ab
#279	((diet* or food* or fluid or fluids) near/3 modif*):ti,ab
#280	((food* or fluid or fluids) near/5 (thicken* or consistenc*)):ti,ab
#281	((swallow* or deglutition or inglutition or dysphagia) near/3 (train* or retrain* or re-train* or manag* or therap* or rehab* or exercis* or manoeuvre* or program*)):ti,ab
#282	MeSH descriptor: [Electric Stimulation] this term only
#283	MeSH descriptor: [Electric Stimulation Therapy] this term only
#284	MeSH descriptor: [Transcranial Direct Current Stimulation] this term only
#285	MeSH descriptor: [Transcranial Magnetic Stimulation] this term only
#286	#282 or #283 or #284 or #285
#287	MeSH descriptor: [Deglutition] this term only
#288	MeSH descriptor: [Deglutition Disorders] this term only
#289	#287 or #288
#290	#286 and #289
#291	((electric* or direct current or magnetic) near/3 stimulat* near/5 (swallow* or deglutition or inglutition or dysphagia)):ti,ab
#292	(pharyngeal near/3 stimulat*):ti,ab
#293	MeSH descriptor: [Enteral Nutrition] this term only

#	Searches
#294	MeSH descriptor: [Intubation, Gastrointestinal] this term only
#295	MeSH descriptor: [Gastrostomy] this term only
#296	MeSH descriptor: [Jejunostomy] this term only
#297	((enteral* or tube*) near/3 (nutrition* or feed* or fed*)):ti,ab
#298	((nasogastric* or gastrointestinal*) near/3 (tube* or intubat* or nutrition* or feed* or fed*)):ti,ab
#299	gastrostom*:ti,ab
#300	jejunostom*:ti,ab
#301	MeSH descriptor: [Activities of Daily Living] this term only
#302	MeSH descriptor: [Rehabilitation] this term only
#303	MeSH descriptor: [Neurological Rehabilitation] this term only
#304	#302 or #303
#305	#301 and #304
#306	rehab*:ti
#307	#301 and #306
#308	#133 or #134 or #137 or #139 or #140 or #141 or #142 or #143 or #144 or #145 or #146 or #147 or #148 or #149 or #150 or #151 or #152 or #153 or #154 or #155 or #156 or #157 or #158 or #159 or #160 or #161 or #162 or #163 or #164 or #165 or #166 or #167 or #168 or #169 or #170 or #171 or #172 or #173 or #174 or #175 or #176 or #177 or #178 or #179 or #180 or #181 or #182 or #183 or #184 or #185 or #186 or #187 or #188 or #189 or #190 or #191 or #192 or #193 or #194 or #195 or #196 or #197 or #198 or #199 or #200 or #201 or #202 or #203 or #204 or #205 or #206 or #207 or #208 or #209 or #210 or #211 or #212 or #213 or #214 or #215 or #216 or #217 or #218 or #219 or #220 or #221 or #222 or #223 or #224 or #225 or #226 or #227 or #228 or #229 or #230 or #231 or #232 or #233 or #234 or #235 or #236 or #237 or #238 or #239 or #242 or #244 or #245 or #246 or #247 or #248 or #249 or #250 or #251 or #252 or #253 or #254 or #255 or #256 or #257 or #258 or #259 or #260 or #261 or #266 or #267 or #268 or #269 or #270 or #271 or #272 or #273 or #274 or #275 or #276 or #277 or #278 or #279 or #280 or #281 or #290 or #291 or #292 or #293 or #294 or #295 or #296 or #297 or #298 or #299 or #300 or #305 or #307
#309	#132 and #308
#310	#132 and #308 with Cochrane Library publication date Between Jan 2013 and Jan 2024, in Cochrane Reviews
#311	((clinicaltrials or trialsearch* or trial-registry or trials-registry or clinicalstudies or trialsregister* or trialregister* or trial-number* or studyregister* or study-register* or controlled-trials-com or current-controlled-trial or AMCTR or ANZCTR or ChiCTR* or CRiS or CTIS or CTRI* or DRKS* or EU-CTR* or EUCTR* or EUDRACT* or ICTRP or IRCT* or JAPIC* or JMCTR* or JRCT or ISRCTN* or LBCTR* or NTR* or ReBec* or REPEC* or RPCEC* or SLCTR or TCTR* or UMIN*):so or (ctgov or ictrp)):an
#312	#309 not #311
#313	"conference":pt
#314	#312 not #313
#315	#312 not #313 with Publication Year from 2013 to 2024, in Trials

Databases: PsycInfo

Date of last search: 05/01/2024

#	Searches
1	(exp Brain Injuries/ or anoxia/ or exp brain disorders/ or exp cerebrovascular disorders/ or exp headache/) not (exp Dementia/ or Cerebrovascular Accidents/)
2	((brain* or cereb* or craniocereb* or cranial or intracrani* or neurocognit*) adj2 (injur* or trauma* or damage* or disease*1 or disorder* or infect* or h?emorrhag* or neoplasm* or cancer* or tumo?r* or insult* or impair* or ischemi* or ischaemi* or infarcti* or hypoxi* or drown*)).ti,ab.
3	(chronic* adj1 trauma* adj2 encephalopath*).ti,ab.

#	Searches
4	((infratentorial* or supratentorial* or hypothalam* or pituitar* or choroid plexus) adj2 (neoplasm* or cancer* or tumo?r* or carcinom* or adenocarcinom*)).ti,ab.
5	(brain* adj2 abscess*).ti,ab.
6	(carotid arter* adj2 (disease* or injur*)).ti,ab.
7	("basal ganglia disease*" or encephalitis or meningoencephalitis or hydrocephal* or "paraneoplastic cereb* degenerat*" or "shak* baby syndrome*").ti,ab.
8	Cerebrovascular Accidents/ and (exp childhood development/ or exp adolescent development/ or pediatrics/ or puberty/)
9	(stroke? adj3 (p?ediatric* or child* or adolescen* or kid or kids or youth* or youngster* or minor or minors or underage* or under-age* or "under age*" or teen or teens or teenager* or juvenile* or boy or boys or boyhood or girl or girls or girlhood or schoolchild* or "school age*" or schoolage* or "under 16" or "under sixteen*")).ti,ab.
10	spinal cord injuries/ or (Spinal Cord/ and neoplasms/) or (Cardiovascular Disorders/ and spinal cord/) or exp myelitis/
11	((spinal* or spine?) adj2 (injur* or trauma* or tumo?r* or neoplasm* or cancer* or infect* or insult* or disease? or disorder* or degenrat* or compress* or vascular* or ischemi* or ischaemi* or infarct* or h?emorrhag*)).ti,ab.
12	(Central cord syndrome* or transverse myelitis).ti,ab.
13	(epidural* adj2 (neoplasm* or cancer* or tumo?r* or abscess*)).ti,ab.
14	((spinal* or spine?) adj2 (viral* or virus* or polio* or acquired immunodeficiency syndrome or AIDS or HIV or bacterial* or neurosyphili* or neuro-syphili* or tubercul*)).ti,ab.
15	(exp Peripheral Nervous System/ and (Injuries/ or neoplasms/)) or nervous system disorders/
16	((periph* or cranial*) adj1 (nerve? or nervous system) adj2 (injur* or trauma* or disorder* or disease* or damage* or neoplasm* or cancer* or tumo?r* or inflamm* or autoimmun* or paraneoplastic* or neuropath* or syndrome?)).ti,ab.
17	(Guillain* adj1 Barr*).ti,ab.
18	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) adj1 nerve* adj1 injur*).ti,ab.
19	(optic* adj1 nerve* adj2 (neoplasm* or cancer* or tumo?r*)).ti,ab.
20	(brachial plexus adj1 (neuropath* or neuritis)).ti,ab.
21	(complex regional pain syndrome* or causalgia or mononeuropath* or nerve compression syndrome*).ti,ab.
22	((femoral or median or peroneal or radial or sciatic or tibial or ulnar) adj1 neuropath*).ti,ab.
23	((carpal-tunnel or piriformis-muscle or tarsal-tunnel or thoracic-outlet) adj1 syndrome*).ti,ab.
24	(pudendal neuralgia or polyneuropath* or polyradiculoneuropath* or polyradiculopath* or radiculopath*).ti,ab.
25	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) adj1 nerve* adj1 disease*).ti,ab.
26	(periph* adj2 neuropath*).ti,ab.
27	(((periph* or cranial*) adj2 (nerve? or nervous system)) and lupus).ti,ab.
28	((multi-focal* or multifocal*) adj2 motor adj1 neuropath*).ti,ab.
29	(((periph* or cranial*) adj2 (nerve? or nervous system)) and alcohol*).ti,ab.
30	motor neurons/ or exp muscular disorders/ or exp neuromuscular disorders/ or multiple sclerosis/ or neurodegenerative diseases/ or Progressive Supranuclear Palsy/ or corticobasal degeneration/ or Metabolism Disorders/ or Williams Syndrome/ or genetic disorders/ or rett syndrome/ or fetal alcohol syndrome/ or exp peripheral neuropathy/ or spina bifida/
31	(neurolog* adj1 (condition* or disease* or damage* or disorder* or impair*)).ti,ab.
32	((motor-neuron* or gehrig* or charcott* or kennedy*) adj1 disease*).ti,ab.
33	((amyotroph* or primary) adj1 lateral* adj1 sclero*).ti,ab.
34	(bulbar adj1 pals*).ti,ab.
35	((muscular or muscle* or bulbo) adj1 atroph* adj1 spin*).ti,ab.

#	Searches
36	(progressiv* adj1 (muscular or muscle*) adj1 atroph*).ti,ab.
37	((postpolio* or post-polio*) adj1 syndrome?).ti,ab.
38	(Parkinson* or duchenne* or multiple scleros?s* or aphasia or creutzfeldt-jakob or hunting-ton* or kluver-bucy).ti,ab.
39	(muscular adj1 dystroph*).ti,ab.
40	(neuromusc* adj1 (disease* or disorder?)).ti,ab.
41	(heredit* adj1 spastic* adj1 parapleg*).ti,ab.
42	"friedreich* ataxia*".ti,ab.
43	((multiple system or olivopontocerebellar) adj1 atroph*).ti,ab.
44	(shy-drager syndrome* or striatonigral degenerat* or batten* disease?).ti,ab.
45	(progressive adj1 supranuclear adj1 pals*).ti,ab.
46	(richardson* adj1 (disease? or syndrome?)).ti,ab.
47	((corticobasal or cortico basal) adj1 degenerat*).ti,ab.
48	(white adj1 matter adj1 disorder?).ti,ab.
49	(metachromatic leukodystroph* or mitochondrial myopath* or mucopolysaccharidos*).ti,ab.
50	(lysosomal adj1 storage adj1 disorder?).ti,ab.
51	((genetic or William* or catch-22 or rett* or congenital or f?etal alcohol) adj1 (syndrome or disorder*)).ti,ab.
52	(perinatal illness* or perinatal hypoxia*).ti,ab.
53	(primary adj1 dystonia?).ti,ab.
54	(heredit* adj1 motor* adj1 sens* adj1 neuropath*).ti,ab.
55	(spina bifida? or spinal dysraphism?).ti,ab.
56	conversion disorder/
57	((functional* or psychogenic* or dissociative*) adj1 neurologic* adj1 (disorder* or dysfunc-tion* or difficult*)).ti,ab.
58	((movement* or motor* or convers*) adj1 (disorder* or dysfunct*)).ti,ab.
59	((psychogenic or dissociative or non-epilep* or nonepilep*) adj1 (seizure* or convulsion* or fit or fits or spasm* or attack*)).ti,ab.
60	(pseudo-seizure* or pseudoseizure*).ti,ab.
61	(medical* adj1 (unexplain* or un-explain*) adj1 symptom?).ti,ab.
62	or/1-61
63	(intervention* adj5 adapt* adj3 function*).ti,ab.
64	(function* adj3 task* adj3 train*).ti,ab.
65	TASK ANALYSIS/ and rehab*.ti,ab.
66	((task? or activit*) adj3 (analys* or pacing or pace? or break* or staging or staged or cue* or prompt*)).ti,ab.
67	(energ* adj3 conserv*).ti,ab.
68	PROMPTING/
69	((hierarch* or supervis*) adj3 prompt*).ti,ab.
70	COACHING/
71	coach*.ti,ab.
72	((repetitiv* or repeat* or practice? or practicing) adj3 (task? or skill?)).ti,ab.
73	RELEARNING/
74	((train* or retrain* or relearn*) adj3 (task? or skill?)).ti,ab.
75	PLAY THERAPY/
76	(play* adj3 (intervention* or therap*)).ti,ab.
77	(intervention* adj5 activit* adj3 daily living).ti,ab.
78	(intervention* adj5 everyday living).ti,ab.
79	(personal* adj5 activit* adj3 daily living).ti,ab.

#	Searches
80	(personal* adj3 care adj3 assist*).ti,ab.
81	(intervention* adj5 (wash* or dress* or groom* or bath* or toilet* or eat* or drink*)).ti,ab.
82	((grab or drop down) adj3 rail*).ti,ab.
83	(toilet adj3 (frame? or seat*)).ti,ab.
84	commode?.ti,ab.
85	((bath* or shower*) adj3 (chair* or seat* or lift?)).ti,ab.
86	(wash* adj3 dry* adj3 toilet?).ti,ab.
87	((adapt* or sit*) adj3 (bath? or shower* or toilet*)).ti,ab.
88	((wash* or dress* or groom* or bath* or toilet* or eat* or drink*) adj3 aid?).ti,ab.
89	(personal* adj3 (hygien* or groom*)).ti,ab.
90	((adapt* or weight* or ergonomic* or large*) adj3 (cutlery or utensil? or spoon? or fork? or blade? or handle?)).ti,ab.
91	((feed* or food? or eat* or universal) adj3 (cuff? or strap?)).ti,ab.
92	(splayd? or sporf? or spork?).ti,ab.
93	((nonslip* or antislip* or slip* or grip*) adj3 mat?).ti,ab.
94	((plate? or crockery) adj3 (warm* or guard* or adapt*)).ti,ab.
95	((assist* or self) adj3 (eat* or feed*) adj3 device?).ti,ab.
96	(mobile adj3 arm? adj3 support*).ti,ab.
97	Neater-Eater.ti,ab.
98	((adapt* or ergonomic*) adj3 (cup? or bottle? or drink*)).ti,ab.
99	((angle? or handle? or spill*) adj3 (cup? or spout?)).ti,ab.
100	((adapt* or ergonomic* or one way or Pat Saunder*) adj3 straw?).ti,ab.
101	(extended adj5 activit* adj3 daily living).ti,ab.
102	(domestic* adj5 activit* adj3 daily living).ti,ab.
103	(intervention* adj5 (domestic* or communit* or housework* or shop* or cook* or clean* or (house* adj3 manag*))).ti,ab.
104	((domestic* or communit* or house* or shop* or cook* or clean*) adj3 aid?).ti,ab.
105	((live? or living or complet*) adj3 independen*).ti,ab.
106	(communit* adj3 living adj3 skill?).ti,ab.
107	SELF-MANAGEMENT/
108	SELF-CARE/
109	(self adj3 (manag* or care)).ti,ab.
110	exp TIME MANAGEMENT/
111	(time adj3 manag*).ti,ab.
112	(intervention* adj3 (orientat* or organis* or executive)).ti,ab.
113	((orientat* or organis* or executive) adj3 skill?).ti,ab.
114	DRIVERS/
115	AUTOMOBILES/
116	((intervention* or aid? or help* or skill?) adj3 (drive or driving or car or cars or transport* or bus or buses or tram? or train?)).ti,ab.
117	((car or cars or vehicle?) adj3 adapt*).ti,ab.
118	(intervention? adj3 functional mobility).ti,ab.
119	MOBILITY AIDS/
120	(wheelchair? or wheel chair?).ti,ab.
121	((walk* or ambulat*) adj3 (aid? or stick? or cane? or frame?)).ti,ab.
122	((gutter or pulpit or delta) adj3 frame?).ti,ab.
123	(stand* adj3 (frame? or aid*)).ti,ab.
124	ASSISTIVE TECHNOLOGY/
125	MEDICAL THERAPEUTIC DEVICES/

#	Searches
126	(orthos?s or orthotic).ti,ab.
127	(mobile adj3 support?).ti,ab.
128	((ankle? or leg?) adj3 (brace? or bracing)).ti,ab.
129	(push adj3 (brace? or bracing or aequi)).ti,ab.
130	(full* adj3 length* adj3 caliper?).ti,ab.
131	(leg? adj3 caliper?).ti,ab.
132	strapp*.ti,ab.
133	taping.ti,ab.
134	((intervention? or equipment or device?) adj5 support* adj3 function*).ti,ab.
135	((intervention? or equipment or device?) adj5 modif* adj3 environment*).ti,ab.
136	(tech* adj3 intervention?).ti,ab.
137	TELEMEDICINE/
138	TELEREHABILITATION/
139	((tele* or virtual) adj3 (health* or medicine or rehab*)).ti,ab.
140	(telehealth* or tele-health* or telemedicine or tele-medicine or telerehab* or tele-rehab* or virtualhealth* or virtual-health* or virtualmedicine or virtual-medicine or virtualrehab* or virtual-rehab*).ti,ab.
141	((phone? or smartphone? or app? or tablet? or web or internet or computer* or online) adj3 (medicine or rehab*)).ti,ab.
142	(interact* adj3 health* adj3 monitor*).ti,ab.
143	ASSISTIVE TECHNOLOGY/
144	(assist* adj3 (device? or technolog*)).ti,ab.
145	((self help or selfhelp) adj3 (device? or technolog* or aid?)).ti,ab.
146	(environment* adj3 control* adj5 (device? or technolog* or intervention?)).ti,ab.
147	((adapt* or modif*) adj3 (device? or technolog* or equipment)).ti,ab.
148	((adapt* or modif*) adj3 (light* or lamp? or fan? or door? or curtain? or window? or grip? or handle? or intercom? or alarm? or pager?)).ti,ab.
149	AUGMENTATIVE COMMUNICATION/
150	HUMAN COMPUTER INTERACTION/
151	AUTOMATED SPEECH RECOGNITION/
152	(communicat* adj3 (aid? or board?)).ti,ab.
153	(comput* adj3 interfac*).ti,ab.
154	(input adj3 device?).ti,ab.
155	((ambient* or alternativ* or augment*) adj3 tech*).ti,ab.
156	((voice? or speech* or speak*) adj3 recog* adj3 (software or technolog* or device?)).ti,ab.
157	(eye? adj3 (gaze? or gazing or track*) adj3 (software or technolog* or device?)).ti,ab.
158	((blink* or tilt* or resist* or suck* or puff*) adj3 (switch* or button*)).ti,ab.
159	(keyboard? or joystick? or roller ball?).ti,ab.
160	(mouse adj3 (computer* or tracking)).ti,ab.
161	POSTURE/ and rehab*.ti,ab.
162	((position* or postur*) adj3 (manag* or therap* or rehab*)).ti,ab.
163	((twenty four or "24") adj3 (hour? or "h" or "hr") adj5 (postur* or position*)).ti,ab.
164	(("24h" or "24hr") adj5 (postur* or position*)).ti,ab.
165	(sleep* adj3 system?).ti,ab.
166	((carved or mould*or modul* or adapt* or bespoke or system? or special*) adj3 seat*).ti,ab.
167	(backrest? or back rest?).ti,ab.
168	((seat* or sit*) adj3 wedge?).ti,ab.
169	(cushion? or cushioning).ti,ab.
170	((lateral* or lumbar) adj3 support*).ti,ab.

#	Searches
171	((rise* or rising or riser or reclin* or electr* or immers* or comf* or tilt*) adj3 (chair* or arm-chair?)).ti,ab.
172	WEARABLE DEVICES/
173	(wear* adj3 (tech* or device?)).ti,ab.
174	((wear* or worn or cloth* or strap* or armband? or waistband? or shorts or trousers or splint*) adj5 (neuromuscular* or function* or electric* or stimulat* or NMES or FES)).ti,ab.
175	((neural or neuro) adj3 prosthe*).ti,ab.
176	(neuralprosthe* or neuroprosthe*).ti,ab.
177	MOLLII.ti,ab.
178	ROBOTICS/ and GAIT/
179	(robot* adj5 (gait or lower limb* or lower extremit* or ortho* or train*)).ti,ab.
180	(exoskeleton* or exo-skeleton*).ti,ab.
181	((EKSO or Rex) adj3 bionic*).ti,ab.
182	(rewalk or Indego).ti,ab.
183	((intervention? or device?) adj5 upper adj3 (limb? or extremit*)).ti,ab.
184	((intervention? or device?) adj5 arm?).ti,ab.
185	(saebo adj3 (reach or glove or flex)).ti,ab.
186	(upper adj3 (limb? or extremit*) adj3 splint*).ti,ab.
187	(arm? adj3 splint*).ti,ab.
188	((dynamic or extension or working) adj3 splint*).ti,ab.
189	(intervention* adj5 (sustain* or improv* or capab*) adj3 (eat* or drink* or swallow*)).ti,ab.
190	((diet* or food* or fluid?) adj3 modif*).ti,ab.
191	((food* or fluid?) adj5 (thicken* or consistenc*)).ti,ab.
192	((swallow* or deglutition or inglutition or dysphagia) adj3 (train* or retrain* or re-train* or manag* or therap* or rehab* or exercis* or manoeuvre? or program*)).ti,ab.
193	(ELECTRICAL STIMULATION/ or ELECTRICAL BRAIN STIMULATION/ or TRANSCRANIAL MAGNETIC STIMULATION/ or TRANSCRANIAL DIRECT CURRENT STIMULATION/) and SWALLOWING/
194	((electric* or direct current or magnetic) adj3 stimulat* adj5 (swallow* or deglutition or inglutition or dysphagia)).ti,ab.
195	(pharyngeal adj3 stimulat*).ti,ab.
196	((enteral* or tube?) adj3 (nutrition* or feed* or fed*)).ti,ab.
197	((nasogastric* or gastrointestinal*) adj3 (tube? or intubat* or nutrition* or feed* or fed*)).ti,ab.
198	gastrostom*.ti,ab.
199	jejunostom*.ti,ab.
200	"ACTIVITIES OF DAILY LIVING"/ and (REHABILITATION/ or exp NEUROREHABILITATION/)
201	"ACTIVITIES OF DAILY LIVING"/ and rehab*.ti.
202	or/63-201
203	62 and 202
204	(letter or editorial or comment reply).dt. or case report/
205	(letter or comment*).ti.
206	or/204-205
207	exp randomized controlled trial/
208	random*.ti,ab.
209	or/207-208
210	206 not 209
211	animal.po.
212	(rat or rats or rodent* or mouse or mice).ti.

#	Searches
213	or/210-212
214	203 not 213
215	limit 214 to english language
216	limit 215 to yr="2013 -Current"
217	(meta analysis or "systematic review").md.
218	META ANALYSIS/
219	SYSTEMATIC REVIEW/
220	(meta analy* or metanaly* or metaanaly*).ti,ab.
221	((systematic* or evidence*) adj2 (review* or overview*)).ti,ab.
222	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
223	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
224	(search* adj4 literature).ab.
225	((pool* or combined) adj2 (data or trials or studies or results)).ab.
226	(medline or pubmed or cochrane or embase or psychlit or psyclit or cinahl or science citation index or bids or cancerlit).ab.
227	or/217-226
228	clinical trial.md.
229	Clinical trials/
230	Randomized controlled trials/
231	Randomized clinical trials/
232	assign*.ti,ab.
233	allocat*.ti,ab.
234	crossover*.ti,ab.
235	cross over*.ti,ab.
236	((doubl* or singl*) adj blind*).ti,ab.
237	factorial*.ti,ab.
238	placebo*.ti,ab.
239	random*.ti,ab.
240	volunteer*.ti,ab.
241	trial?.ti,ab.
242	or/228-241
243	EPIDEMIOLOGY/ or PROSPECTIVE STUDIES/ or RETROSPECTIVE STUDIES/ or COHORT ANALYSIS/ or FOLLOWUP STUDIES/ or exp CLINICAL TRIALS/
244	(control and study).mp.
245	program.mp.
246	or/243-245
247	(adolescence 13 17 yrs or childhood birth 12 yrs or infancy 2 23 mo or neonatal birth 1 mo or preschool age 2 5 yrs or school age 6 12 yrs).ag.
248	Pediatrics/ or Puberty/ or Adolescence/
249	(child* or adolescen* or baby or babies or boy? or girl? or infan* or juvenile? or kid? or kindergar* or minors or neonat* or newborn? or p?ediatric* or prepubert* or pre pubert* or prepubescen* or pre pubescen* or preschool* or pre school* or preteen* or pre teen* or pubert* or pubescen* or schoolchild* or school age? or teen* or toddler* or young or youth?).ti,ab.
250	(child* or adolescen* or baby or babies or infan* or juvenile? or kindergar* or neonat* or newborn? or p?ediatric* or prepubert* or pre pubert* or pubert* or schoolchild* or school age?).jw.
251	or/247-250
252	216 and (227 or 242)
253	216 and 246 and 251

#	Searches
254	or/252-253
255	limit 254 to ("0100 journal" or "0110 peer-reviewed journal")

Databases: Social policy and practice

Date of last search: 05/01/2024

#	Searches
1	((brain* or cereb* or craniocereb* or cranial or intracrani* or neurocognit*) adj2 (injur* or trauma* or damage* or disease*1 or disorder* or infect* or h?emorrhag* or neoplasm* or cancer* or tumo?r* or insult* or impair* or ischemi* or infarcti* or hypoxi* or drown*)).ti,ab.
2	((brain* or cereb* or craniocereb* or cranial or intracrani* or neurocognit*) and (injur* or trauma* or damage* or disease* or disorder* or infect* or h?emorrhag* or neoplasm* or cancer* or tumo?r* or insult* or impair* or ischemi* or infarcti* or hypoxi* or drown*)).hw.
3	(chronic* adj1 trauma* adj2 encephalopath*).ti,ab.
4	(chronic* and trauma* and encephalopath*).hw.
5	((infratentorial* or supratentorial* or hypothalam* or pituitar* or choroid plexus) adj2 (neoplasm* or cancer* or tumo?r* or carcinom* or adenocarcinom*)).ti,ab.
6	((infratentorial* or supratentorial* or hypothalam* or pituitar* or choroid plexus) and (neoplasm* or cancer* or tumo?r* or carcinom* or adenocarcinom*)).hw.
7	(brain* adj2 abscess*).ti,ab.
8	(brain* and abscess*).hw.
9	(carotid arter* adj2 (disease* or injur*)).ti,ab.
10	(carotid arter* and (disease* or injur*)).hw.
11	("basal ganglia disease*" or encephalitis or meningoencephalitis or hydrocephal* or "paraneoplastic cereb* degenerat*" or "shak* baby syndrome*").ti,ab.
12	("basal ganglia disease*" or encephalitis or meningoencephalitis or hydrocephal* or "paraneoplastic cereb* degenerat*" or "shak* baby syndrome*").hw.
13	(stroke? adj3 (p?ediatric* or child* or adolescen* or kid or kids or youth* or youngster* or minor or minors or underage* or under-age* or "under age*" or teen or teens or teenager* or juvenile* or boy or boys or boyhood or girl or girls or girlhood or schoolchild* or "school age*" or schoolage* or "under 16" or "under sixteen*")).ti,ab.
14	(stroke? and (p?ediatric* or child* or adolescen* or kid or kids or youth* or youngster* or minor or minors or underage* or under-age* or "under age*" or teen or teens or teenager* or juvenile* or boy or boys or boyhood or girl or girls or girlhood or schoolchild* or "school age*" or schoolage* or "under 16" or "under sixteen*")).hw.
15	((spinal* or spine?) adj2 (injur* or trauma* or tumo?r* or neoplasm* or cancer* or infect* or insult* or disease? or disorder* or degenrat* or compress* or vascular* or ischemi* or ischaemi* or infarct* or h?emorrhag*)).ti,ab.
16	((spinal* or spine?) and (injur* or trauma* or tumo?r* or neoplasm* or cancer* or infect* or insult* or disease? or disorder* or degenrat* or compress* or vascular* or ischemi* or ischaemi* or infarct* or h?emorrhag*)).hw.
17	(Central cord syndrome* or transverse myelitis).ti,ab.
18	(Central cord syndrome* or transverse myelitis).hw.
19	(epidural* adj2 (neoplasm* or cancer* or tumo?r* or abscess*)).ti,ab.
20	(epidural* and (neoplasm* or cancer* or tumo?r* or abscess*)).hw.
21	((spinal* or spine?) adj2 (viral* or virus* or polio* or acquired immunodeficiency syndrome or AIDS or HIV or bacterial* or neurosyphili* or neuro-syphili* or tubercul*)).ti,ab.
22	((spinal* or spine?) and (viral* or virus* or polio* or acquired immunodeficiency syndrome or bacterial* or neurosyphili* or neuro-syphili* or tubercul*)).hw.
23	((periph* or cranial*) adj1 (nerve? or nervous system) adj2 (injur* or trauma* or disorder* or disease* or damage* or neoplasm* or cancer* or tumo?r* or inflamm* or autoimmun* or paraneoplastic* or neuropath* or syndrome?)).ti,ab.
24	((periph* or cranial*) and (nerve? or nervous system) and (injur* or trauma* or disorder* or disease* or damage* or neoplasm* or cancer* or tumo?r* or inflamm* or autoimmun* or paraneoplastic* or neuropath* or syndrome?)).hw.
25	(Guillain* adj1 Barr*).ti,ab.
26	(Guillain* and Barr*).hw.
27	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) adj1 nerve* adj1 injur*).ti,ab.

28	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) and nerve* and injur*).hw.
29	(optic* adj1 nerve* adj2 (neoplasm* or cancer* or tumo?r*)).ti,ab.
30	(optic* and nerve* and (neoplasm* or cancer* or tumo?r*)).hw.
31	(brachial plexus adj1 (neuropath* or neuritis)).ti,ab.
32	(brachial plexus and (neuropath* or neuritis)).hw.
33	(complex regional pain syndrome* or causalgia or mononeuropath* or nerve compression syndrome*).ti,ab.
34	(complex regional pain syndrome* or causalgia or mononeuropath* or nerve compression syndrome*).hw.
35	((femoral or median or peroneal or radial or sciatic or tibial or ulnar) adj1 neuropath*).ti,ab.
36	((femoral or median or peroneal or radial or sciatic or tibial or ulnar) and neuropath*).hw.
37	((carpal-tunnel or piriformis-muscle or tarsal-tunnel or thoracic-outlet) adj1 syndrome*).ti,ab.
38	((carpal-tunnel or piriformis-muscle or tarsal-tunnel or thoracic-outlet) and syndrome*).hw.
39	(pudendal neuralgia or polyneuropath* or polyradiculoneuropath* or polyradiculopath* or radiculopath*).ti,ab.
40	(pudendal neuralgia or polyneuropath* or polyradiculoneuropath* or polyradiculopath* or radiculopath*).hw.
41	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) adj1 nerve* adj1 disease*).ti,ab.
42	((abducen* or accessory or facial or glossopharyngeal or hypoglossal or oculomotor or ocular motility or olfactory or optic* or trigeminal or trochlear or vestibulocochlear) and nerve* and disease*).hw.
43	(periph* adj2 neuropath*).ti,ab.
44	(periph* and neuropath*).hw.
45	(((periph* or cranial*) adj2 (nerve? or nervous system)) and lupus).ti,ab.
46	((periph* or cranial*) and (nerve? or nervous system) and lupus).hw.
47	((multi-focal* or multifocal*) adj2 motor adj1 neuropath*).ti,ab.
48	((multi-focal* or multifocal*) and motor and neuropath*).hw.
49	(((periph* or cranial*) adj2 (nerve? or nervous system)) and alcohol*).ti,ab.
50	((periph* or cranial*) and (nerve? or nervous system) and alcohol*).hw.
51	(neurolog* adj1 (condition* or disease* or damage* or disorder* or impair*)).ti,ab.
52	(neurolog* and (condition* or disease* or damage* or disorder* or impair*)).hw.
53	((motor-neuron* or gehrig* or charcott* or kennedy*) adj1 disease*).ti,ab.
54	((motor-neuron* or gehrig* or charcott* or kennedy*) and disease*).hw.
55	((amyotroph* or primary) adj1 lateral* adj1 sclero*).ti,ab.
56	((amyotroph* or primary) and lateral* and sclero*).hw.
57	(bulbar adj1 pals*).ti,ab.
58	(bulbar and pals*).hw.
59	((muscular or muscle* or bulbo) adj1 atroph* adj1 spin*).ti,ab.
60	((muscular or muscle* or bulbo) and atroph* and spin*).hw.
61	(progressiv* adj1 (muscular or muscle*) adj1 atroph*).ti,ab.
62	(progressiv* and (muscular or muscle*) and atroph*).hw.
63	((postpolio* or post-polio*) adj1 syndrome?).ti,ab.
64	((postpolio* or post-polio*) and syndrome?).hw.
65	(Parkinson* or duchenne* or multiple scleros?s* or aphasia or creutzfeldt-jakob or huntington* or kluver-bucy).ti,ab.
66	(Parkinson* or duchenne* or multiple scleros?s* or aphasia or creutzfeldt-jakob or huntington* or kluver-bucy).hw.
67	(muscular adj1 dystroph*).ti,ab.

68	(muscular adj1 dystroph*).hw.
69	(neuromusc* adj1 (disease* or disorder?)).ti,ab.
70	(neuromusc* adj1 (disease* or disorder?)).hw.
71	(heredit* adj1 spastic* adj1 parapleg*).ti,ab.
72	(heredit* and spastic* and parapleg*).hw.
73	"friedreich* ataxia*".ti,ab.
74	"friedreich* ataxia*".hw.
75	((multiple system or olivopontocerebellar) adj1 atroph*).ti,ab.
76	((multiple system or olivopontocerebellar) and atroph*).hw.
77	(shy-drager syndrome* or striatonigral degenerat* or batten* disease?).ti,ab.
78	(shy-drager syndrome* or striatonigral degenerat* or batten* disease?).hw.
79	(progressive adj1 supranuclear adj1 pals*).ti,ab.
80	(progressive and supranuclear and pals*).hw.
81	(richardson* adj1 (disease? or syndrome?)).ti,ab.
82	(richardson* and (disease? or syndrome?)).hw.
83	((corticobasal or cortico basal) adj1 degenerat*).ti,ab.
84	((corticobasal or cortico basal) and degenerat*).hw.
85	(white adj1 matter adj1 disorder?).ti,ab.
86	(white and matter and disorder?).hw.
87	(metachromatic leukodystroph* or mitochondrial myopath* or mucopolysaccharidos*).ti,ab.
88	(metachromatic leukodystroph* or mitochondrial myopath* or mucopolysaccharidos*).hw.
89	(lysosomal adj1 storage adj1 disorder?).ti,ab.
90	(lysosomal and storage and disorder?).hw.
91	((genetic or William* or catch-22 or rett* or congenital or f?etal alcohol) adj1 (syndrome or disorder*)).ti,ab.
92	((genetic or William* or congenital or f?etal alcohol) and (syndrome or disorder*)).hw.
93	(perinatal illness* or perinatal hypoxia*).ti,ab.
94	(perinatal illness* or perinatal hypoxia*).hw.
95	(primary adj1 dystonia?).ti,ab.
96	(primary and dystonia?).hw.
97	(heredit* adj1 motor* adj1 sens* adj1 neuropath*).ti,ab.
98	(heredit* and motor* and sens* and neuropath*).hw.
99	(spina bifida? or spinal dysraphism?).ti,ab.
100	(spina bifida? or spinal dysraphism?).hw.
101	((functional* or psychogenic* or dissociative*) adj1 neurologic* adj1 (disorder* or dysfunction* or difficult*)).ti,ab.
102	((functional* or psychogenic* or dissociative*) and neurologic* and (disorder* or dysfunction* or difficult*)).hw.
103	((movement* or motor* or convers*) adj1 (disorder* or dysfunct*)).ti,ab.
104	((movement* or motor* or convers*) and (disorder* or dysfunct*)).hw.
105	((psychogenic or dissociative or non-epilep* or nonepilep*) adj1 (seizure* or convulsion* or fit or fits or spasm* or attack*)).ti,ab.
106	((psychogenic or dissociative or non-epilep* or nonepilep*) and (seizure* or convulsion* or fit or fits or spasm* or attack*)).hw.
107	(pseudo-seizure* or pseudoseizure*).ti,ab.
108	(pseudo-seizure* or pseudoseizure*).hw.
109	(medical* adj1 (unexplain* or un-explain*) adj1 symptom?).ti,ab.
110	(medical* and (unexplain* or un-explain*) and symptom?).hw.
111	or/1-110
112	(intervention* adj5 adapt* adj3 function*).ti,ab.

113	(intervention* and adapt* and function*).hw.
114	(function* adj3 task* adj3 train*).ti,ab.
115	(function* and task* and train*).hw.
116	((task? or activit*) adj3 (analys* or pacing or pace? or break* or staging or staged or cue* or prompt*)).ti,ab.
117	((task? or activit*) and (analys* or pacing or pace? or break* or staging or staged or cue* or prompt*)).hw.
118	(energ* adj3 conserv*).ti,ab.
119	(energ* and conserv*).hw.
120	((hierarch* or supervis*) adj3 prompt*).ti,ab.
121	((hierarch* or supervis*) and prompt*).hw.
122	coach*.ti,ab.
123	coach*.hw.
124	((repetitiv* or repeat* or practice? or practicing) adj3 (task? or skill?)).ti,ab.
125	((repetitiv* or repeat* or practice? or practicing) and (task? or skill?)).hw.
126	((train* or retrain* or relearn*) adj3 (task? or skill?)).ti,ab.
127	((train* or retrain* or relearn*) and (task? or skill?)).hw.
128	(play* adj3 (intervention* or therap*)).ti,ab.
129	(play* and (intervention* or therap*)).hw.
130	(intervention* adj5 activit* adj3 daily living).ti,ab.
131	(intervention* and activit* and daily living).hw.
132	(intervention* adj5 everyday living).ti,ab.
133	(intervention* and everyday living).hw.
134	(personal* adj5 activit* adj3 daily living).ti,ab.
135	(personal* and activit* and daily living).hw.
136	(personal* adj3 care adj3 assist*).ti,ab.
137	(personal* and care and assist*).hw.
138	(intervention* adj5 (wash* or dress* or groom* or bath* or toilet* or eat* or drink*)).ti,ab.
139	(intervention* and (wash* or dress* or groom* or bath* or toilet* or eat* or drink*)).hw.
140	((grab or drop down) adj3 rail*).ti,ab.
141	((grab or drop down) and rail*).hw.
142	(toilet adj3 (frame? or seat*)).ti,ab.
143	(toilet and (frame? or seat*)).hw.
144	commode?.ti,ab.
145	commode?.hw.
146	((bath* or shower*) adj3 (chair* or seat* or lift?)).ti,ab.
147	((bath* or shower*) and (chair* or seat* or lift?)).hw.
148	(wash* adj3 dry* adj3 toilet?).ti,ab.
149	(wash* and dry* and toilet?).hw.
150	((adapt* or sit*) adj3 (bath? or shower* or toilet*)).ti,ab.
151	((adapt* or sit*) and (bath? or shower* or toilet*)).hw.
152	((wash* or dress* or groom* or bath* or toilet* or eat* or drink*) adj3 aid?).ti,ab.
153	((wash* or dress* or groom* or bath* or toilet* or eat* or drink*) and aid?).hw.
154	(personal* adj3 (hygien* or groom*)).ti,ab.
155	(personal* and (hygien* or groom*)).hw.
156	((adapt* or weight* or ergonomic* or large*) adj3 (cutlery or utensil? or spoon? or fork? or blade? or handle?)).ti,ab.
157	((adapt* or weight* or ergonomic* or large*) and (cutlery or utensil? or spoon? or fork? or blade? or handle?)).hw.
158	((feed* or food? or eat* or universal) adj3 (cuff? or strap?)).ti,ab.

159	((feed* or food? or eat* or universal) and (cuff? or strap?)).hw.
160	(splayd? or sporf? or spork?).ti,ab.
161	(splayd? or sporf? or spork?).hw.
162	((nonslip* or antislip* or slip* or grip*) adj3 mat?).ti,ab.
163	((nonslip* or antislip* or slip* or grip*) and mat?).hw.
164	((plate? or crockery) adj3 (warm* or guard* or adapt*)).ti,ab.
165	((plate? or crockery) and (warm* or guard* or adapt*)).hw.
166	((assist* or self) adj3 (eat* or feed*) adj3 device?).ti,ab.
167	((assist* or self) and (eat* or feed*) and device?).hw.
168	(mobile adj3 arm? adj3 support*).ti,ab.
169	(mobile and arm? and support*).hw.
170	Neater-Eater.ti,ab.
171	Neater-Eater.hw.
172	((adapt* or ergonomic*) adj3 (cup? or bottle? or drink*)).ti,ab.
173	((adapt* or ergonomic*) and (cup? or bottle? or drink*)).hw.
174	((angle? or handle? or spill*) adj3 (cup? or spout?)).ti,ab.
175	((angle? or handle? or spill*) and (cup? or spout?)).hw.
176	((adapt* or ergonomic* or one way or Pat Saunder*) adj3 straw?).ti,ab.
177	((adapt* or ergonomic* or one way or Pat Saunder*) and straw?).hw.
178	(extended adj5 activit* adj3 daily living).ti,ab.
179	(extended and activit* and daily living).hw.
180	(domestic* adj5 activit* adj3 daily living).ti,ab.
181	(domestic* and activit* and daily living).hw.
182	(intervention* adj5 (domestic* or communit* or housework* or shop* or cook* or clean* or (house* adj3 manag*))).ti,ab.
183	(intervention* and (domestic* or communit* or housework* or shop* or cook* or clean* or (house* and manag*))).hw.
184	((domestic* or communit* or house* or shop* or cook* or clean*) adj3 aid?).ti,ab.
185	((domestic* or communit* or house* or shop* or cook* or clean*) and aid?).hw.
186	((live? or living or complet*) adj3 independen*).ti,ab.
187	((live? or living or complet*) and independen*).hw.
188	(communit* adj3 living adj3 skill?).ti,ab.
189	(communit* and living and skill?).hw.
190	(self adj3 (manag* or care)).ti,ab.
191	(self and (manag* or care)).hw.
192	(time adj3 manag*).ti,ab.
193	(time and manag*).hw.
194	(intervention* adj3 (orientat* or organis* or executive)).ti,ab.
195	(intervention* and (orientat* or organis* or executive)).hw.
196	((orientat* or organis* or executive) adj3 skill?).ti,ab.
197	((orientat* or organis* or executive) and skill?).hw.
198	((intervention* or aid? or help* or skill?) adj3 (drive or driving or car or cars or transport* or bus or buses or tram? or train?)).ti,ab.
199	((intervention* or aid? or help* or skill?) and (drive or driving or car or cars or transport* or bus or buses or tram? or train?)).hw.
200	((car or cars or vehicle?) adj3 adapt*).ti,ab.
201	((car or cars or vehicle?) and adapt*).hw.
202	(intervention? adj3 functional mobility).ti,ab.
203	(intervention? and functional mobility).hw.
204	(wheelchair? or wheel chair?).ti,ab.

205	(wheelchair? or wheel chair?).hw.
206	((walk* or ambulat*) adj3 (aid? or stick? or cane? or frame?)).ti,ab.
207	((walk* or ambulat*) and (aid? or stick? or cane? or frame?)).hw.
208	((gutter or pulpit or delta) adj3 frame?).ti,ab.
209	((gutter or pulpit or delta) and frame?).hw.
210	(stand* adj3 (frame? or aid*)).ti,ab.
211	(stand* and (frame? or aid*)).hw.
212	(orthos?s or orthotic).ti,ab.
213	(orthos?s or orthotic).hw.
214	(mobile adj3 support?).ti,ab.
215	(mobile and support?).hw.
216	((ankle? or leg?) adj3 (brace? or bracing)).ti,ab.
217	((ankle? or leg?) and (brace? or bracing)).hw.
218	(push adj3 (brace? or bracing or aequi)).ti,ab.
219	(push and (brace? or bracing or aequi)).hw.
220	(full* adj3 length* adj3 caliper?).ti,ab.
221	(full* and length* and caliper?).hw.
222	(leg? adj3 caliper?).ti,ab.
223	(leg? and caliper?).hw.
224	strapp*.ti,ab.
225	strapp*.hw.
226	taping.ti,ab.
227	taping.hw.
228	((intervention? or equipment or device?) adj5 support* adj3 function*).ti,ab.
229	((intervention? or equipment or device?) and support* and function*).hw.
230	((intervention? or equipment or device?) adj5 modif* adj3 environment*).ti,ab.
231	((intervention? or equipment or device?) and modif* and environment*).hw.
232	(tech* adj3 intervention?).ti,ab.
233	(tech* and intervention?).hw.
234	((tele* or virtual) adj3 (health* or medicine or rehab*)).ti,ab.
235	((tele* or virtual) and (health* or medicine or rehab*)).hw.
236	(telehealth* or tele-health* or telemedicine or tele-medicine or telerehab* or tele-rehab* or virtualhealth* or virtual-health* or virtualmedicine or virtual-medicine or virtualrehab* or virtual-rehab*).ti,ab.
237	(telehealth* or tele-health* or telemedicine or tele-medicine or telerehab* or tele-rehab* or virtualhealth* or virtual-health* or virtualmedicine or virtual-medicine or virtualrehab* or virtual-rehab*).hw.
238	((phone? or smartphone? or app? or tablet? or web or internet or computer* or online) adj3 (medicine or rehab*)).ti,ab.
239	((phone? or smartphone? or app? or tablet? or web or internet or computer* or online) and (medicine or rehab*)).hw.
240	(interact* adj3 health* adj3 monitor*).ti,ab.
241	(interact* and health* and monitor*).hw.
242	(assist* adj3 (device? or technolog*)).ti,ab.
243	(assist* and (device? or technolog*)).hw.
244	((self help or selfhelp) adj3 (device? or technolog* or aid?)).ti,ab.
245	((self help or selfhelp) and (device? or technolog* or aid?)).hw.
246	(environment* adj3 control* adj5 (device? or technolog* or intervention?)).ti,ab.
247	(environment* and control* and (device? or technolog* or intervention?)).hw.
248	((adapt* or modif*) adj3 (device? or technolog* or equipment)).ti,ab.
249	((adapt* or modif*) and (device? or technolog* or equipment)).hw.

250	((adapt* or modif*) adj3 (light* or lamp? or fan? or door? or curtain? or window? or grip? or handle? or intercom? or alarm? or pager?)).ti,ab.
251	((adapt* or modif*) and (light* or lamp? or fan? or door? or curtain? or window? or grip? or handle? or intercom? or alarm? or pager?)).hw.
252	(communicat* adj3 (aid? or board?)).ti,ab.
253	(communicat* and (aid? or board?)).hw.
254	(comput* adj3 interfac*).ti,ab.
255	(comput* and interfac*).hw.
256	(input adj3 device?).ti,ab.
257	(input and device?).hw.
258	((ambient* or alternativ* or augment*) adj3 tech*).ti,ab.
259	((ambient* or alternativ* or augment*) and tech*).hw.
260	((voice? or speech* or speak*) adj3 recog* adj3 (software or technolog* or device?)).ti,ab.
261	((voice? or speech* or speak*) and recog* and (software or technolog* or device?)).hw.
262	(eye? adj3 (gaze? or gazing or track*) adj3 (software or technolog* or device?)).ti,ab.
263	(eye? and (gaze? or gazing or track*) and (software or technolog* or device?)).hw.
264	((blink* or tilt* or resist* or suck* or puff*) adj3 (switch* or button*)).ti,ab.
265	((blink* or tilt* or resist* or suck* or puff*) and (switch* or button*)).hw.
266	(keyboard? or joystick? or roller ball?).ti,ab.
267	(keyboard? or joystick? or roller ball?).hw.
268	(mouse adj3 (computer* or tracking)).ti,ab.
269	(mouse and (computer* or tracking)).hw.
270	((position* or postur*) adj3 (manag* or therap* or rehab*)).ti,ab.
271	((position* or postur*) and (manag* or therap* or rehab*)).hw.
272	((twenty four or "24") adj3 (hour? or "h" or "hr") adj5 (postur* or position*)).ti,ab.
273	((twenty four or "24") and (hour? or "h" or "hr") and (postur* or position*)).hw.
274	(("24h" or "24hr") adj5 (postur* or position*)).ti,ab.
275	(("24h" or "24hr") and (postur* or position*)).hw.
276	(sleep* adj3 system?).ti,ab.
277	(sleep* and system?).hw.
278	((carved or mould*or modul* or adapt* or bespoke or system? or special*) adj3 seat*).ti,ab.
279	((carved or mould*or modul* or adapt* or bespoke or system? or special*) and seat*).hw.
280	(backrest? or back rest?).ti,ab.
281	(backrest? or back rest?).hw.
282	((seat* or sit*) adj3 wedge?).ti,ab.
283	((seat* or sit*) and wedge?).hw.
284	(cushion? or cushioning).ti,ab.
285	(cushion? or cushioning).hw.
286	((lateral* or lumbar) adj3 support*).ti,ab.
287	((lateral* or lumbar) and support*).hw.
288	((rise* or rising or riser or reclin* or electr* or immers* or comf* or tilt*) adj3 (chair* or arm-chair?)).ti,ab.
289	((rise* or rising or riser or reclin* or electr* or immers* or comf* or tilt*) and (chair* or arm-chair?)).hw.
290	(wear* adj3 (tech* or device?)).ti,ab.
291	(wear* and (tech* or device?)).hw.
292	((wear* or worn or cloth* or strap* or armband? or waistband? or shorts or trousers or splint*) adj5 (neuromuscular* or function* or electric* or stimulat* or NMES or FES)).ti,ab.
293	((wear* or worn or cloth* or strap* or armband? or waistband? or shorts or trousers or splint*) and (neuromuscular* or function* or electric* or stimulat* or NMES or FES)).hw.
294	((neural or neuro) adj3 prosthe*).ti,ab.

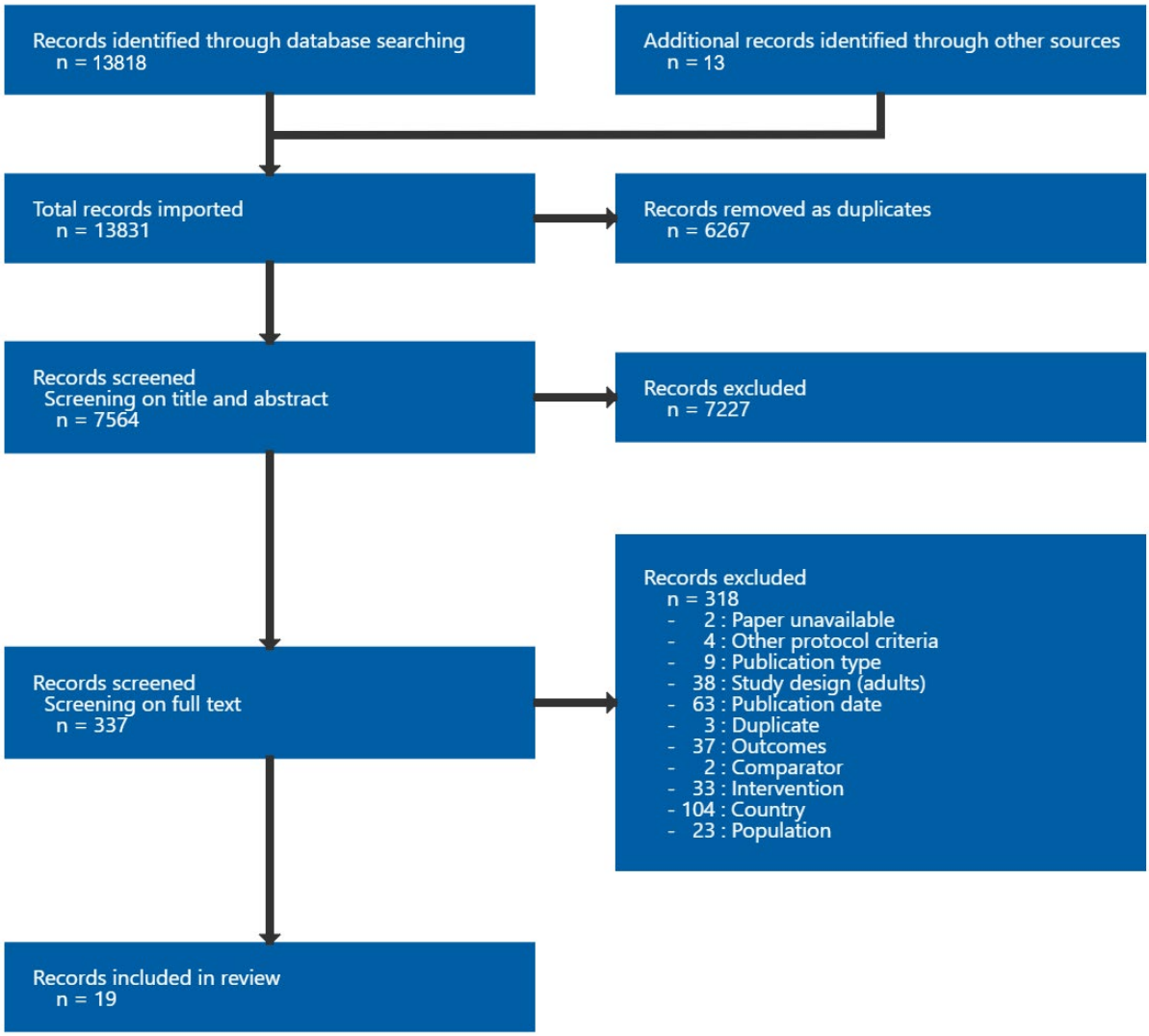
295	((neural or neuro) and prosthe*).hw.
296	(neuralprosthe* or neuroprosthe*).ti,ab.
297	(neuralprosthe* or neuroprosthe*).hw.
298	MOLLII.ti,ab.
299	MOLLII.hw.
300	(robot* adj5 (gait or lower limb* or lower extremit* or ortho* or train*)).ti,ab.
301	(robot* and (gait or lower limb* or lower extremit* or ortho* or train*)).hw.
302	(exoskeleton* or exo-skeleton*).ti,ab.
303	(exoskeleton* or exo-skeleton*).hw.
304	((EKSO or Rex) adj3 bionic*).ti,ab.
305	((EKSO or Rex) and bionic*).hw.
306	(rewalk or Indego).ti,ab.
307	(rewalk or Indego).hw.
308	((intervention? or device?) adj5 upper adj3 (limb? or extremit*)).ti,ab.
309	((intervention? or device?) and upper and (limb? or extremit*)).hw.
310	((intervention? or device?) adj5 arm?).ti,ab.
311	((intervention? or device?) and arm?).hw.
312	(saebo adj3 (reach or glove or flex)).ti,ab.
313	(saebo and (reach or glove or flex)).hw.
314	(upper adj3 (limb? or extremit*) adj3 splint*).ti,ab.
315	(upper and (limb? or extremit*) and splint*).hw.
316	(arm? adj3 splint*).ti,ab.
317	(arm? and splint*).hw.
318	((dynamic or extension or working) adj3 splint*).ti,ab.
319	((dynamic or extension or working) and splint*).hw.
320	(intervention* adj5 (sustain* or improv* or capab*) adj3 (eat* or drink* or swallow*)).ti,ab.
321	(intervention* and (sustain* or improv* or capab*) and (eat* or drink* or swallow*)).hw.
322	((diet* or food* or fluid?) adj3 modif*).ti,ab.
323	((diet* or food* or fluid?) and modif*).hw.
324	((food* or fluid?) adj5 (thicken* or consistenc*)).ti,ab.
325	((food* or fluid?) and (thicken* or consistenc*)).hw.
326	((swallow* or deglutition or inglutition or dysphagia) adj3 (train* or retrain* or re-train* or manag* or therap* or rehab* or exercis* or manoeuvre? or program*)).ti,ab.
327	((swallow* or deglutition or inglutition or dysphagia) and (train* or retrain* or re-train* or manag* or therap* or rehab* or exercis* or manoeuvre? or program*)).hw.
328	((electric* or direct current or magnetic) adj3 stimulat* adj5 (swallow* or deglutition or inglutition or dysphagia)).ti,ab.
329	((electric* or direct current or magnetic) and stimulat* and (swallow* or deglutition or inglutition or dysphagia)).hw.
330	(pharyngeal adj3 stimulat*).ti,ab.
331	(pharyngeal and stimulat*).hw.
332	((enteral* or tube?) adj3 (nutrition* or feed* or fed*)).ti,ab.
333	((enteral* or tube?) and (nutrition* or feed* or fed*)).hw.
334	((nasogastric* or gastrointestinal*) adj3 (tube? or intubat* or nutrition* or feed* or fed*)).ti,ab.
335	((nasogastric* or gastrointestinal*) and (tube? or intubat* or nutrition* or feed* or fed*)).hw.
336	gastrostom*.ti,ab.
337	gastrostom*.hw.
338	jejunostom*.ti,ab.
339	jejunostom*.hw.

340	or/112-339
341	111 and 340
342	limit 341 to yr="2013 -Current"

Appendix C Effectiveness evidence study selection

Study selection for: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Figure 1: Study selection flow chart



Appendix D Evidence tables

Evidence tables for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Table 6: Evidence tables

Clarke, 2016

Bibliographic Reference	Clarke, C.E.; Patel, S.; Ives, N.; Rick, C.E.; Woolley, R.; Wheatley, K.; Walker, M.F.; Zhu, S.; Kandiyali, R.; Yao, G.; Sackley, C.M.; Clinical effectiveness and cost-effectiveness of physiotherapy and occupational therapy versus no therapy in mild to moderate Parkinson's disease: a large pragmatic randomised controlled trial (PD REHAB); Health technology assessment (Winchester, England); 2016; vol. 20 (no. 63); 1-96

Study details

Country/ies where study was carried out	UK
Study type	Randomised controlled trial (RCT)
Study dates	October 2009 - June 2012
Inclusion criteria	- Diagnosed with idiopathic Parkinson's disease (as defined by the Parkinson's UK Brain Bank Criteria) and limitations with activities of daily living, - People who the researchers were uncertain about needing physiotherapy and/or occupational therapy during the 15-month study.
Exclusion criteria	- Presence of dementia (as defined by local guidelines), - Received physiotherapy or occupational therapy in the previous 12 months.

Patient characteristics	N=762 with Parkonson's disease - Combined physiotherapy and occupational therapy: n=381 - Waitlist control: n=381 Age in years [Mean (SD)]: - Combined physiotherapy and occupational therapy: 70 (9.1) - Waitlist control: 70 (9.3) Sex (M/F): - Combined physiotherapy and occupational therapy: n=240/n=141 - Waitlist control: n=258/n=123 Time since diagnosis in years [Mean (SD)][1]: - Combined physiotherapy and occupational therapy: 4.5 (5.9) - Waitlist control: 4.6 (4.5) Chronic neurological disorder category: Progressive neurological disease [1]Only reported for 379 participants in control group.
Intervention(s)/control	**Intervention** Name: Combined physiotherapy and occupational therapy

	Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment – Technological interventions Delivery setting: Occupational therapy sessions: community: 69% sessions; outpatients: 29%; other (no further details given): 2% Physiotherapy sessions: outpatients: 53%; community: 39%; other (no further details given): 8% Number/frequency of sessions: Physiotherapy and occupational therapy sessions: median (range) total number of sessions 4 (1-21); mean time per session: 58-minutes; mean (range) total dose in minutes: 263 (38-1198) Duration: Mean of 8 weeks Practitioner(s): Physiotherapist and occupational therapist Expert therapist groups agreed a framework for therapy content, based on UK NHS and European physiotherapy and occupational therapy guidelines and using a standard rehabilitation approach. Participants were assessed by a physiotherapist and an occupational therapist, who then used a joint goal-setting approach to tailor a rehabilitation programme to the individual. Intervention content of occupational therapy sessions: transfers 45%; dressing and grooming 36%; sleep and fatigue 31%; indoor mobility 28%; household tasks 28%; other environmental issues (no further details reported) 27%. Practitioners assessed the full range of activities of daily living (including social activities and work), and mainly prescribed equipment (for example, bed levers or adaptive cutlery), referral to other services (for example, speech and language therapy or cognitive assessment), and general lifestyle advice (for example, addressing sleep problems or how to apply for benefits). Intervention content of physiotherapy sessions: gait 96%; posture 93%; balance 90%; physical conditioning 81%; transfers 78%. Practitioners prescribed a range of exercise programmes tailored to participant physical strength and range of movement and included walking aids. **Control** Name: Waitlist control Protocol description: Control (waitlist) Delivery setting: Not applicable

	Number/frequency of sessions: Not applicable Duration: 15 months Practitioner(s): Not applicable Note: Control participants were not prevented from receiving therapy outside of the study.
Duration of follow-up	15 months
Sources of funding	Not industry funded
Sample size	N=762 Combined physiotherapy and occupational therapy: n=381 Waitlist control: n=381
Other information	NEADL and PDQ-39 sub-scale scores also reported but not extracted as not in protocol.

ADL: activities of daily living; N/n: number of participants; NEADL: Nottingham extended activities of daily living: PDQ-39: Parkinson's disease questionnaire; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- 3 months follow-up
- 9 months follow-up
- 15 months follow-up

Tailored physiotherapy and occupational therapy versus waitlist control: Functional independence

Functional independence as measured by NEADL - Polarity - Higher values are better

Outcome	Combined physiotherapy and occupational therapy, 3 months follow-up vs Baseline, N = 294	Combined physiotherapy and occupational therapy, 9 months follow-up vs Baseline, N = 289	Combined physiotherapy and occupational therapy, 15 months follow-up vs Baseline, N = 268	Waitlist control, 3 months follow-up vs Baseline, N = 304	Waitlist control, 9 months follow-up vs Baseline, N = 303	Waitlist control, 15 months follow-up vs Baseline, N = 283
NEADL Mean (SD)	-1.5 (7.8)	-3.6 (8.1)	-3.8 (8.6)	-1 (7.4)	-3 (8.4)	-5 (9.8)

N/n: number of participants; NEADL: Nottingham extended activities of daily living; SD: standard deviation

Tailored physiotherapy and occupational therapy versus waitlist control: Physical and mental health related quality of life

Physical and mental health related quality of life as measured by PDQ-39 summary index - Polarity - Lower values are better

Physical and mental health related quality of life as measured by EQ-5D quotient - Polarity - Higher values are better

Physical and mental health related quality of life as measured by EQ-5D VAS - Polarity - Higher values are better

Outcome	Combined physiotherapy and occupational therapy, 3 months follow-up vs Baseline, N = 349	Combined physiotherapy and occupational therapy, 9 months follow-up vs Baseline, N = 325	Combined physiotherapy and occupational therapy, 15 months follow-up vs Baseline, N = 310	Waitlist control, 3 months follow-up vs Baseline, N = 351	Waitlist control, 9 months follow-up vs Baseline, N = 327	Waitlist control, 15 months follow-up vs Baseline, N = 319
PDQ-39 summary index Mean (SD)	2.4 (9.5)	3.5 (9.7)	4.3 (10.6)	2.4 (10.8)	4.6 (10.7)	6.5 (11.4)

N/n: number of participants; PDQ-39: Parkinson's disease questionnaire; SD: standard deviation

Outcome	Combined physiotherapy and occupational therapy, 3 months follow-up vs Baseline, N = 342	Combined physiotherapy and occupational therapy, 9 months follow-up vs Baseline, N = 321	Combined physiotherapy and occupational therapy, 15 months follow-up vs Baseline, N = 304	Waitlist control, 3 months follow-up vs Baseline, N = 338	Waitlist control, 9 months follow-up vs Baseline, N = 322	Waitlist control, 15 months follow-up vs Baseline, N = 313
EQ-5D quotient Mean (SD)	0.002 (0.23)	-0.02 (0.26)	-0.05 (0.27)	-0.03 (0.21)	-0.05 (0.22)	-0.09 (0.23)

EQ-5D: EuroQol 5-dimensions; N/n: number of participants; SD: standard deviation

Outcome	Combined physiotherapy and occupational therapy, 3 months follow-up vs Baseline, N = 341	Combined physiotherapy and occupational therapy, 9 months follow-up vs Baseline, N = 319	Combined physiotherapy and occupational therapy, 15 months follow-up vs Baseline, N = 305	Waitlist control, 3 months follow-up vs Baseline, N = 342	Waitlist control, 9 months follow-up vs Baseline, N = 323	Waitlist control, 15 months follow-up vs Baseline, N = 309
EQ-5D VAS Mean (SD)	-1.8 (17.1)	-3.5 (16.6)	-4.7 (7.3)	-1.9 (14.3)	-4.5 (16.1)	-5.8 (16.3)

N/n: number of participants; EQ-5D VAS: EuroQol 5-dimensions visual analogue scale; *SD: standard deviation*

Tailored physiotherapy and occupational therapy versus waitlist control: Carer quality of life

Carer quality of life as measured by SF-12 physical component - Polarity - Higher values are better

Carer quality of life as measured by SF-12 mental component - Polarity - Higher values are better

Outcome	Combined physiotherapy and occupational therapy, 3 months follow-up vs Baseline, N = 146	Waitlist control, 3 months follow-up vs Baseline, N = 144
Carer quality of life as measured by SF-12 physical component Mean (SD)	-1.6 (7.5)	-2.1 (7.5)
Carer quality of life as measured by SF-12 mental component Mean (SD)	-0.5 (7.6)	-2.6 (7.9)

N/n: number of participants; SF-12: 12-item short form survey; SD: standard deviation

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Computer generated randomisation sequence; allocation concealed using online external service; no suggestion of problems with randomisation process (statistical analysis not presented but study states baseline characteristics similar between groups).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low *(No information on blinding of participants, carers and people delivering intervention but nature of intervention and control hard to blind against; probably no deviations from intended intervention due to trial context. Intention to treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low *(Participants with NEADL outcome data at 3 months: intervention 350/381 (91.9%), control 349/381 (91.6%); participants with NEADL outcome data at 9 months: intervention 326/381 (85.6%), control 331/381 (86.9%); participants with NEADL outcome data at 15 months: intervention 311/381 (81.6%), control 322.381 (84.5%);*

Section	Question	Answer
		sensitivity analysis and correction for bias analysis presented and reported not to change results.)
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	High *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors probably aware of group allocation as self-reported measures by probably unblinded participants; outcome measurement likely to be influenced by knowledge of group allocation as subjective measurements and control group only received routine clinic visits.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low *(Analysis as per protocol which was published online probably before outcome data were available; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Partially applicable *(Intervention is indirect due to inclusion of physiotherapy components aimed at improving symptoms such as gait, balance, and physical conditioning (outside of protocol).)*
Overall bias and Directness	Risk of bias variation across outcomes	None identified

NEADL: Nottingham extended activities of daily living

Claus, 2021

Bibliographic Reference	Claus, Inga; Muhle, Paul; Czechowski, Judith; Ahring, Sigrid; Labeit, Bendix; Suntrup-Krueger, Sonja; Wiendl, Heinz; Dziewas, Rainer; Warnecke, Tobias; Expiratory Muscle Strength Training for Therapy of Pharyngeal Dysphagia in Parkinson's Disease.; Movement disorders : official journal of the Movement Disorder Society; 2021; vol. 36 (no. 8); 1815-1824

Study details

Country/ies where study was carried out	Germany
Study type	Randomised controlled trial (RCT)
Study dates	Recruitment: May 2015 - August 2018.
Inclusion criteria	- People with a diagnosis of Parkinson's Disease (defined using the modified Hoehn & Yahr staging scale, stages II to IV). - People with confirmed pharyngeal dysphagia by flexible endoscopic evaluation of swallowing (defined by the occurrence of penetration or aspiration of food of any texture, noticeable residue remaining in the pharynx after swallowing, or early leakage accompanied by a delayed start of the swallowing reflex). - Four weeks prior to the study, participants had to be on oral nutrition and on stable and sufficient medication.
Exclusion criteria	- People with the presence of other neurological diseases or conditions causing dysphagia, relevant dementia (defined by a score on the Mini–Mental State Examination of< 25 points, and a score on the Montreal Cognitive Assessment of < 26 points), or severe depression (defined by a score on the Beck Depression Inventory of > 19 points). - People with the presence of a percutaneous endoscopic gastrostomy.
Patient characteristics	N=50 adults with Parkinson’s disease - Expiratory muscle strength training: n=25 - Sham expiratory muscle strength training: n=25 Age in years [Mean (SD)]: - Expiratory muscle strength training: 67.3 (9.5) -Sham expiratory muscle strength training: 67.1 (7.7)

	Sex (M/F): - Expiratory muscle strength training: 19/5 - Sham expiratory muscle strength training: 18/3 Time since diagnosis in years [Mean (SD)]: - Expiratory muscle strength training: 6.6 (2.8) -Sham expiratory muscle strength training: 6.5 (4.1) Chronic neurological disorder category: Progressive neurological disease
Interven-tion(s)/control	**Intervention** Name: Expiratory muscle strength training (EMST) with pressure meter to evaluate maximum expiratory pressure. Protocol intervention group: Interventions for sustaining or improving capability in eating, drinking and swallowing. Delivery setting: In the home. Number/frequency of sessions: 5 sets of 5 repetitions per training episode, 5 days a week. Duration: 4 weeks. Practitioner(s): Not applicable. All participants underwent a dysphagia assessment at their baseline visit. At the initial study visit, all participants (both active and control) were taught the EMST training protocol, including using nose clips, breathing deeply, lightly holding their cheeks, forcefully exhaling into the device, and checking for unrestricted airflow. Their ability to perform the task was assessed during a follow-up training period, with feedback provided. Each participant also received written instructions. During the study period, all participants completed a training logbook, and completed a phone-based assessment during the intervention. **Control**

	Name: Sham expiratory muscle strength training (EMST). Protocol intervention group: Control. Delivery setting: In the home. Number/frequency of sessions: 5 sets of 5 repetitions per training episode, 5 days a week. Duration: 4 weeks. Practitioner(s): Not applicable. The sham device was identical to the EMST device except the pressure release valve was made to be nonfunctional by removing the pressure meter. Therefore, it was providing little to no physiological load to the targeted muscles.
Duration of follow-up	3 months.
Sources of funding	Non-industry funded.
Sample size	N=50 Expiratory muscle strength training: n=25 Sham expiratory muscle strength training: n=25

ADLs: activities of daily living; EMST: expiratory muscle strength training N/n: number of participants; SD: standard deviation

Outcomes

Study timepoints

- Post-intervention (4 weeks)
- Post-intervention (3 months)

Expiratory muscle strength training versus placebo (sham): Swallowing quality of life

Swallowing Quality of Life Questionnaire (SWAL-QOL) - Polarity - Higher values are better

Outcome	Expiratory muscle strength training, Post-intervention (4 weeks), N = 25	Expiratory muscle strength training, Post-intervention (3 months), N = 24	Sham expiratory muscle strength training, Post-intervention (4 weeks), N = 25	Sham expiratory muscle strength training, Post-intervention (3 months), N = 21
Swallowing Quality of Life Questionnaire (SWAL-QOL) Mean (SE)	188.88 (26.78)	185.92 (26.36)	174.19 (29.58)	174.52 (30.73)

N/n: number of participants; SE: standard error

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Computer generated randomisation sequence; no information reported on allocation concealment but likely it was concealed; no suggestion of problems with randomisation process (baseline characteristics similar between groups))*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Some concerns *(No information on blinding of participants, carers and people delivering intervention but author's report both clinician and participant were blinded; probably no deviations from intended intervention due to trial context. Some concerns as per protocol analysis performed and reasons for loss to follow up not reported.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Some concerns *(Participants in intervention arm at 3 months follow-up: 24/25 (96%), control 21/25 (84%); no sensitivity analysis or correction for bias analysis reported and reasons for loss to follow up not reported.)*

Section	Question	Answer
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Low *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors probably aware of group allocation as self-reported measures by participants; outcome measurement might be influenced by knowledge of group allocation as outcome was a subjective measurement.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low *(Analysis as per protocol which was published online probably before outcome data was available.)*
Overall bias and Directness	Risk of bias judgement	Some concerns
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Cubo, 2017

Bibliographic Reference	Cubo, E; Mariscal, N; Solano, B; Becerra, V; Armesto, D; Calvo, S; Arribas, J; Seco, J; Martinez, A; Zorrilla, L; Heldman, D; Prospective study on cost-effectiveness of home-based motor assessment in Parkinson's disease.; Journal of telemedicine and telecare; 2017; vol. 23 (no. 2); 328-338

Study details

Country/ies where study was carried out	Spain

Study type	Randomised controlled trial (RCT)
Study dates	Not reported
Inclusion criteria	- Diagnosed with idiopathic, advanced Parkinson's disease (defined as a Unified Parkinson's Disease Rating Scale motor complications score over 4), - Mini-Mental State Examination score over 24.
Exclusion criteria	- Secondary parkinsonism or Parkinson-plus syndrome, - Presence of dementia.
Patient characteristics	N=40 adults with Parkinson's disease - Home-based motor monitoring plus standard in-office management: n=20 - Standard in-office management: n=20 Age in years [Mean (SD)][1]: - Home-based motor monitoring plus standard in-office management 66.44 (7.09) - Standard in-office management 66.05 (9.76) Sex (M/F)[1]: - Home-based motor monitoring plus standard in-office management: n=10/n=8 - Standard in-office management: n=8/n=12 Time since diagnosis: Not reported

	Chronic neurological disorder category: Progressive neurological diseases [1]Only reported for 18 participants in intervention group.
Intervention(s)/control	**Intervention** Name: Home-based motor monitoring plus standard in-office management Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment – Technological interventions. Delivery setting: At home Number/frequency of sessions: 1 session per month, consisting of 3-6 5-minute assessment sessions. Also received traditional office-based management as per control group. Duration: 12 months Practitioner(s): Specialist neurologist in movement disorders Home-based motor monitoring with Kinesia™ (a wireless motion sensor technology including tablet software, wireless finger-worn motion sensor unit, and automatic internet-based symptom report) for 1 day a month. Participants were provided 1 training session before study began, delivered by an assistant. During assessment, participants wore Kinesia™ on most affected hand before completing a range of automated motor assessments for tremor, bradykinesia, and dyskinesia. Diaries were also completed, recording information on symptoms (including bradykinesia, rigidity, falls, physical exercise, gait issues, and sleep problems) from previous week. Information was automatically uploaded for processing into 0-4 scaling (lower scores being better). Neurologist separately reviews the assessments for tremor, bradykinesia, and dyskinesia, and amended therapy as needed. Participants also received standard in-office management as per comparison group. **Control** Name: Standard in-office management Protocol description: Control (usual care)

	Delivery setting: Outpatient Number/frequency of sessions: 1 session every 4 months Duration: 12 months Practitioner(s): Specialist neurologist in movement disorders At each office visit, the neurologist administered several clinical rating scales: UPDRS and Hoehn and Yahr staging scale for Parkinson's disease severity; Non-Motor Symptoms Questionnaire Scale for severity of non-motor symptoms; EQ-5D questionnaire for health-related quality of life; Hospital Anxiety Depression Scale, Scale for Evaluation of Neuropsychiatric Disorders, and Parkinson Psychiatric Rating Scale for neuropsychiatric symptoms; Cumulative Illness Rating Scale – Geriatric for comorbidities; and Zarit Burden Interview for caregiver burden. Note: Both groups were allowed to amend the Parkinson's disease treatment programme (including medications and other treatments) throughout the study, as well as receiving remote (email or telephone) support from treating practitioners.
Duration of follow-up	12 months
Sources of funding	Industry funded
Sample size	N=40 Home-based motor monitoring plus standard in-office management: n=20 Standard in-office management: n=20
Other information	EQ-5D (QoL) also reported but not extracted as results were converted into QALYs which are not in protocol.

ADL: activities of daily living; EQ-5D: Euroqol 5-dimensions; N/n: number of participants; SD: standard deviation; UPDRS: unified Parkinson's disease rating scale; QALY: quality adjusted life years; QoL: quality of life

Outcomes

Study timepoints

- Baseline
- 12 months follow-up

Home-based motor monitoring plus standard in-office management versus standard in-office management: Functional independence

Functional independence as measured UPDRS II - Polarity - Lower values are better

Out-come	Home-based motor monitoring plus standard in-office management, 12 months follow-up vs Baseline, N = 17	Standard in-office management, 12 months follow-up vs Baseline, N = 18
UPDRS II Mean (SD)	0.18 (7.53)	2.06 (8.71)

N/n: number of participants; SD: standard deviation; UPDRS II: unified Parkinson's disease rating scale part 2

Home-based motor monitoring plus standard in-office management versus standard in-office management: Carer quality of life

Carer quality of life as measured by ZBI - Polarity - Lower values are better

Out-come	Home-based motor monitoring plus standard in-office management, 12 months follow-up vs Baseline, N = 17	Standard in-office management, 12 months follow-up vs Baseline, N = 18
ZBI Mean (SD)	2.19 (11.36)	-1.22 (9.39)

N/n: number of participants; SD: standard deviation; ZBI: Zarit burden index

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns *(Random digit table randomisation sequence; no information on allocation concealment; no suggestion of problems with randomisation process (baseline characteristics similar between groups apart from statistically more participants taking levo-carbodopa intestinal gel in treatment group compared to control).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low *(No information on blinding of participants, carers and people delivering intervention but nature of intervention and control hard to blind against; probably no deviations from intended intervention due to trial context. Modified intention-to- treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Some concerns *(Participants with caregiver burden outcome data at 12 months: intervention 17/20 (85%), control 18/20 (90%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome likely to depend on true value as rates of loss to follow up different across groups.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	High *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors probably aware of group allocation as self-reported measures by probably unblinded participants; outcome measurement likely to be influenced by knowledge of group allocation as subjective measurements and control group did not receive an intervention.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable

Section	Question	Answer
Overall bias and Directness	Risk of bias variation across outcomes	None identified

De Joode, 2013

Bibliographic Reference	De Joode, E A; Van Heugten, C M; Verhey, F R J; Van Boxtel, M P J; Effectiveness of an electronic cognitive aid in patients with acquired brain injury: a multicentre randomised parallel-group study.; Neuropsychological rehabilitation; 2013; vol. 23 (no. 1); 133-56

Study details

Country/ies where study was carried out	The Netherlands
Study type	Randomised controlled trial (RCT)
Study dates	September 2008 - September 2010
Inclusion criteria	- Diagnosis of acquired brain injury resulting in difficulties with activities of daily living (as defined by rehabilitation physician and/or psychologist), - Aged between 18-75 years old, - Able to understand Dutch, - People who a rehabilitation specialist judged would benefit from external cognitive aids (for example, those with a certain level of awareness and cognitive functioning).
Exclusion criteria	- Visual or manual problems preventing normal personal digital assistant use, - Severe psychiatric comorbidities or a progressive neurological disorder.

Patient characteristics	N=40 adults with acquired brain injury - Customised personal digital assistant: n=23 - Pencil and paper aid: n=17 Age in years [Mean (SD)][1]: - Customised personal digital assistant: 42.2 (15.4) - Pencil and paper aid: 39.4 (15.6) Sex (M/F)[1]: - Customised personal digital assistant: n=14/n=7 - Pencil and paper aid: n=10/n=3 Time since injury in months [Mean (SD)] [1]: - Customised personal digital assistant: 38.9 (42.4) - Pencil and paper aid: 65.9 (117.1) Chronic neurological disorder category: Acquired brain injury Protocol population did not include carers. However, carers were included in the study and carer quality of life is a protocol outcome so carer characteristics are presented here for context. N=25 carers of people with acquired brain injury - Customised personal digital assistant: n=18

	- Pencil and paper aid: n=7 Age in years of patient group [Mean (SD)]: Not reported Sex of patient group (M/F): Not reported [1]Only reported for 21 participants in intervention group and 13 in control group.
Intervention(s)/control	**Intervention** Name: Customised personal digital assistant Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Interventions for community living skills Delivery setting: Rehabilitation centre and in the community Number/frequency of sessions: Dependent on individual rehabilitation centre procedure but usually 30-60-minute sessions delivered 2-8 times per month. Totalling 16 hours of training. Duration: 4-6 months after completion of training. Mean time between starting study and halfway through training was 3.3 months, between halfway and completion of training was 4.8 months, and between completion of training and follow-up was 7.1 months. Practitioner(s): Not reported Initial training took between 2-6 sessions, with the remainer focused on individual participant needs when using the personal digital assistant. Practitioners delivering personal digital assistant training received a minimum of 8 hours training from the study authors in the assistive software (Planning and Execution Assistant and Trainer [PEAT]) and how to train participants. Software includes reminders (for example, locking the door before bedtime, take keys when leaving the house, making a shopping list, or taking medication), automatic scheduling of tasks to prevent double booking, a wait button to help with deviations from usual routines, and cueing for beginning and ending of tasks. Four main modules are: cue card to show current and next tasks to assist with initiative or attention); diary to show daily, weekly, or monthly schedule; notes for both written

	and voice notes (which can also be linked to diary entries), and contacts (which can also be linked to diary entries). Pre-defined scripts could also be used to guide participants throughout certain tasks (for example, doing the laundry) by breaking them down into composite steps. Software was translated into the Dutch language and installed on handheld tablets. Participants were encouraged to integrate these into their daily lives (in the rehabilitation centre and once at home). **Control** Name: Pencil and paper aid Protocol description: Control (usual care) Note: Study reports this as usual care for study clinics Delivery setting: Rehabilitation centre and in the community Number/frequency of sessions: Dependent on individual rehabilitation centre procedure but usually 30-60-minute sessions delivered 2-8 times per month. Totalling 16 hours of training. Duration: 4-6 months after completion of training. Mean time between starting study and halfway through training was 3.3 months, between halfway and completion of training was 4.8 months, and between completion of training and follow-up was 7.1 months. Practitioner(s): Not reported Usual care focused on learning skills and strategies to support memory, planning, and organisation. Usually provided using pencil and paper diary training (for example, what information to record, scheduling their days or weeks, and how to include their diary into their daily lives), although this could change between centres. Content was focused on individual needs of the participants when using the memory aids.
Duration of follow-up	4-6 months
Sources of funding	Non-industry funded
Sample size	N=40 Customised personal digital assistant: n=23 Pencil and paper aid: n=17

Other information	Also reports measures at T1 (during intervention) but not extracted as intervention had not been completed.

ADL: activities of daily living; FAI: Frenchay activities index; N/n: number of participants; SD: standard deviation; T: time

Outcomes

Study timepoints

- Baseline
- Post-intervention
- 4-6 months follow-up

Customised personal digital assistant versus pencil and paper aid: Functional independence

Functional independence as measured by FAI - Polarity - Higher values are better

Outcome	Customised personal digital assistant, Post-intervention vs Baseline, N = 19	Customised personal digital assistant, 4-6 months follow-up vs Baseline, N = 10	Pencil and paper aid, Post-intervention vs Baseline, N = 10	Pencil and paper aid, 4-6 months follow-up vs Baseline, N = 9
FAI Mean (SD)	3.7 (7.09)	6.3 (7.11)	-2.5 (4.85)	0.9 (5.29)

FAI: Frenchay activities index; N/n: number of participants; SD: standard deviation

Customised personal digital assistant versus pencil and paper aid: Physical and mental health related quality of life

Physical and mental health related quality of life as measured by SF-36 physical component - Polarity - Higher values are better

Physical and mental health related quality of life as measured by SF-36 mental component - Polarity - Higher values are better

Physical and mental health related quality of life as measured by LISAT-9 - Polarity - Higher values are better

Outcome	Customised personal digital assistant, Post-intervention vs Baseline, N = 19	Customised personal digital assistant, 4-6 months follow-up vs Baseline, N = 10	Pencil and paper aid, Post-intervention vs Baseline, N = 10	Pencil and paper aid, 4-6 months follow-up vs Baseline, N = 9
SF-36 physical component Mean (SD)	-3.8 (6.55)	-1 (5.73)	-0.1 (6.76)	2.4 (8.08)
SF-36 mental component Mean (SD)	1 (9.37)	-1.7 (9.07)	-0.7 (8.84)	0 (7.96)
LISAT-9 Mean (SD)	-1.2 (4.98)	-0.3 (4.83)	-1.6 (5.63)	-1.3 (5.36)

LISAT-9: life satisfaction questionnaire; N/n: number of participants; SD: standard deviation; SF-36: 36-item short form survey.

Customised personal digital assistant versus pencil and paper aid: Personal goal attainment

Personal goal attainment as measured by GAS t-score - Polarity - Higher values are better

Outcome	Customised personal digital assistant, Post-intervention vs Baseline, N = 21	Pencil and paper aid, Post-intervention vs Baseline, N = 12
GAS t-score Mean (SD)	45.2 (32.8)	36.7 (15.6)

GAS: goal attainment scale; N/n: number of participants; SD: standard deviation;

Customised personal digital assistant versus pencil and paper aid: Carer quality of life

Carer quality of life as measured by SF-36 physical component - Polarity - Higher values are better

Carer quality of life as measured by SF-36 mental component - Polarity - Higher values are better

Carer quality of life as measured by LISAT-9 - Polarity - Higher values are better

Carer quality of life as measured by CSI - Polarity - Lower values are better

Outcome	Customised personal digital assistant, Post-intervention vs Baseline, N = 15	Customised personal digital assistant, 4-6 months follow-up vs Baseline, N = 9	Pencil and paper aid, Post-intervention vs Baseline, N = 3	Pencil and paper aid, 4-6 months follow-up vs Baseline, N = 4
SF-36 physical component Mean (SD)	1.9 (7.96)	1 (5.85)	3.6 (7.57)	1.7 (4.54)
SF-36 mental component Mean (SD)	0.5 (7.66)	-4 (8.43)	1.6 (6.97)	5.9 (7.48)
LISAT-9 Mean (SD)	-3.8 (4.33)	-1.1 (3.21)	-3.7 (4.25)	2.1 (2.76)
CSI Mean (SD)	-0.4 (2.55)	-2.5 (3.31)	0.9 (2.72)	-4 (2.45)

CSI: caregiver strain index; LISAT-9: life satisfaction questionnaire; N/n: number of participants; SD: standard deviation.SF-36: 36-item short form survey

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Random selection of opaque envelopes; allocation probably concealed using off-site storage; no suggestion of problems with randomisation process (statistical analysis not presented but study states baseline characteristics similar between groups).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low *(No information on blinding of participants, carers and people delivering intervention but nature of intervention and control hard to blind against; probably no deviations from intended intervention due to trial context. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	High *(Participants with GAS outcome data at post-intervention: intervention 21/23 (91.3%), control 12/17 (70.6%); participants with other outcome data at post-intervention: intervention 19/23 (82.6%), control 10/17 (58.8%); participants with other outcome data at 5 months: intervention 10/23 (43.5%), control 9/17 (52.9%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome likely to depend on true value as rates of loss to follow up different across groups.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	High *(Appropriate outcome measurement method; likely to differ between groups (same measurement tools used but time points could differ between participants. Mean (SD) months between: T0-T1 3.3 (1.7); T1-T2 4.8 (3.0); T2-T3 7.1 (3.3).)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable

Section	Question	Answer
Overall bias and Directness	Risk of bias variation across outcomes	None identified

T: time

Del Pino, 2023

Bibliographic Reference	Del Pino, R.; de Echevarria, A.O.; Diez-Cirarda, M.; Ustarroz-Aguirre, I.; Caprino, M.; Liu, J.; Gand, K.; Schlieter, H.; Gabilondo, I.; Gomez-Esteban, J.C.; Virtual coach and telerehabilitation for Parkinson's disease patients: vCare system; Journal of Public Health (Germany); 2023

Study details

Country/ies where study was carried out	Italy
Study type	Randomised controlled trial (RCT)
Study dates	Not reported
Inclusion criteria	- Diagnosed with Parkinson's disease (as defined by Parkinson’s UK Brain Bank criteria) and a score over 60% on activities of daily living Schwab and England scale, - Motor fluctuations (as reported by participant), - Hoehn and Yahr stages 1-3, - Aged over 60 years old, - Willing to interact with technological devices and who have an internet connection and a TV screen with HDMI port at home.

Exclusion criteria	- Atypical Parkinsonism, dementia, or other chronic diseases (for example, heart failure, severe lung issues, or liver problems), - Unable to leave bed, - Severe psychiatric comorbidities (for example, hallucinations or major depression), - Historically poor adherence to pharmacological treatment or rehabilitation programmes, - Unable to understand and follow protocol, and/or give informed consent.
Patient characteristics	N=20 adults with Parkinson's disease - Virtual coach and telerehabilitation with daily life monitoring system: n=10 - Standard clinical practice: n=10 Age in years [Mean (SD)]: - Virtual coach and telerehabilitation with daily life monitoring system: 64.5 (7.9) - Standard clinical practice: 69.1 (3.5) Sex (M/F): - Virtual coach and telerehabilitation with daily life monitoring system: n=7/n=3 - Standard clinical practice: n=7/n=3 Time since diagnosis in years [Mean (SD)]: Not reported Chronic neurological disorder category: Progressive neurological diseases

Intervention(s)/control	Name: Virtual coach and telerehabilitation with daily life monitoring system (vCare) Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment – Technological interventions Delivery setting: In the home Number/frequency of sessions: 4 x motor and cognitive rehabilitation sessions per week, approximately 30 minutes each (range 20-45 minutes). Duration: 4 months Practitioner(s): Not applicable vCare telerehabilitation included clinical condition monitoring, risk prevention, and motor and cognitive rehabilitation overseen by an artificial intelligence avatar that scheduled rehabilitation sessions in accordance with their rehabilitation plan. Additionally, rehabilitation plans could be amended depending on individual participant's condition and reported results to overseeing clinician. Cognitive and motor exercises used serious games focusing on attention, executive functions, mobility, strengthening, coordination, dexterity, speed, motor control, postural control, balance, endurance, and rhythm. Time taken, games selected, and difficulty levels were personalised for each participant. Before each session, individuals were assessed by the avatar using a fatigue questionnaire, which affected the dose and intensity of the following rehabilitation content. Electronic learning materials were available for each participant, as well as active lifestyle coaching and fall prevention. Monitoring was through movement and presence sensors, a smart band to record daily steps and heart rate, and the STAT-ON device for motor symptoms of Parkinson's disease (for example, gait freezing, bradykinesia, and dyskinesias). Sensors and smart band were worn throughout the study period, and the STAT-ON for 7 days at the start and end of the intervention. Clinical practitioners maintained contact via telephone to ensure software was working correctly. **Control** Name: Standard clinical practice (without traditional rehabilitation element) Protocol description: Control (standard care) Delivery setting: Not applicable Number/frequency of sessions: Not applicable Duration: 4 months

	Practitioner(s): Not applicable Received standard clinical health standard throughout the study period but did not receive any rehabilitation.
Duration of follow-up	Post-intervention
Sources of funding	Not industry funded
Sample size	N=20 Virtual coach and telerehabilitation with daily life monitoring system: n=10 Standard clinical practice: n=10
Other information	EQ-5D sub-scale scores also reported but not extracted as not in protocol.

ADL: activities of daily living; EQ-5D: EuroQol 5-dimensions; N/n: number of participants; RCT: randomised controlled trial; SEADL: Schwab and England activities of daily living scale; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- Post-intervention

Virtual coach and telerehabilitation with daily life monitoring system versus standard clinical practice: Functional independence

Functional independence as measured by Schwab ADL - Polarity - Higher values are better

Functional independence as measured by UPDRS II - Polarity - Lower values are better

Outcome	Virtual coach and telerehabilitation with daily life monitoring system, Post-intervention vs Baseline, N = 10	Standard clinical practice, Post-intervention vs Baseline, N = 8
Schwab ADL Mean (SD)	19.3 (15.31)	-11.2 (18.39)
UPDRS II Mean (SD)	-1.6 (6.01)	-0.2 (7.93)

ADL: activities of daily living; N/n: number of participants; SD: standard deviation; UPDRS II: unified Parkinson's disease rating scale part 2

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns *(No information on randomisation sequence or allocation concealment; no suggestion of problems with randomisation process (baseline characteristics statistically similar between groups).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Some concerns *(No information on blinding of participants, carers and people delivering intervention but nature of intervention and control hard to blind against; no information on deviations from intended intervention due to trial context. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low *(Participants with outcome data at post-intervention: intervention 10/10 (100%), control 8/10 (90%).)*

Section	Question	Answer
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	High *(Appropriate outcome measurement method, no information on whether it could differ between groups; outcome assessors probably aware of group allocation as self-reported measures by probably unblinded participants; outcome measurement likely to be influenced by knowledge of group allocation as subjective measurements and control group did not receive an intervention.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Estival, 2021

Bibliographic Reference	Estival, S.; Laurier, V.; Mourre, F.; Postal, V.; Improvement of Planning Abilities in Adults with Prader-Willi Syndrome: A Randomized Controlled Trial; Developmental Neurorehabilitation; 2021; vol. 24 (no. 7); 478-493

Study details

Country/ies where study was carried out	France
Study type	Randomised controlled trial (RCT)
Study dates	Not reported

Inclusion criteria	- Genetically confirmed diagnosis of Prader Willi syndrome
Exclusion criteria	- Unable to speak or understand the French language, - Severe psychiatric comorbidities or mood disorders, - IQ under 50.
Patient characteristics	N=60 adults with Prader-Willi syndrome - Metacognitive strategy training of planning abilities with ETAPP programme: n=30 - Usual care: n=30 Age in years [Mean (SD)] [1]: - Metacognitive strategy training of planning abilities with ETAPP programme 36.00 (6.63) - Usual care 31.42 (9.06) Sex (M/F) [1]: - Metacognitive strategy training of planning abilities with ETAPP programme: n=11/n=16 - Usual care: n=10/n=16 Time since diagnosis: Not reported Chronic neurological disorder category: Progressive neurological diseases [1]Only reported for 27 participants in intervention group and 26 in control group.

Intervention(s)/control	**Intervention** Name: Metacognitive strategy training of planning abilities with the ETAPP (Evaluation of a Therapeutic Aid of the Planning function in Prader-Willi Syndrome) programme Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Interventions for community living skills Delivery setting: Not reported Number/frequency of sessions: 6x 1-hour sessions Duration: Not reported Practitioner(s): Occupational therapists A composite metacognitive training strategy based on goal management training and attention and problem solving and aimed at addressing planning problems. Self-regulation scripts were added to facilitate self-regulation (for example, predetermining if a task will be easy or hard to complete). Problem-orientation aspects were added to highlight individual reactions to particular tasks. Training occurred in small groups (3-4 participants), supervised by 2 occupational therapists. One session concerned increasing awareness of planning difficulties in everyday life, with subsequent sessions using 'Pause – Define the task – List – Do it – Evaluate' framework alongside explanations, examples and implementation in the context of a task. Occupational therapists oversaw the groups but allowed them to make mistakes to allow awareness and adjustment. **Control** Name: Usual care Protocol description: Control (usual care) Delivery setting: Not reported Number/frequency of sessions: Not reported Duration: Not reported Practitioner(s): Occupational therapists Individually tailored content aimed at motor training (for example, dressing, morning routines, and getting up after a fall).

Duration of follow-up	Post-intervention
Sources of funding	Not industry funded
Sample size	N=60 Metacognitive strategy training of planning abilities with ETAPP programme: n=30 Usual care: n=30
Other information	GAS scores as reported by caregivers at 6 month follow up also reported. However, the procedure for these scores was not as per GAS methodology so not validated and therefore not in protocol.

ADL: activities of daily living; GAS: goal attainment scale; IQ: intelligence quotient; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Post-intervention

Metacognitive strategy training of planning abilities with ETAPP versus usual care: Personal goal attainment

Personal goal attainment as measured by GAS - Polarity - Higher values are better

Outcome	Metacognitive strategy training of planning abilities with ETAPP programme, Post-intervention, N = 24	Usual care, Post-intervention, N = 22
GAS (assessed by participants) No of events	n = 24; % = 100	n = 22; % = 100
-2 (goal attained much less than expected)	n = 6; % = 25	n = 3; % = 13.6

Outcome	Metacognitive strategy training of planning abilities with ETAPP programme, Post-intervention, N = 24	Usual care, Post-intervention, N = 22
No of events		
-1 (goal attained less than expected) No of events	n = 3; % = 12.5	n = 4; % = 18.2
0 (goal attained as expected) No of events	n = 7; % = 29.2	n = 7; % = 31.8
+1 (goal attained more than expected) No of events	n = 2; % = 8.3	n = 4; % = 18.2
+2 (goal attained much more than expected) No of events	n = 6; % = 25	n = 4; % = 18.2

ETAPP: evaluation of a therapeutic aid of the planning function in Prader-Willi syndrome; GAS: goal attainment scale; N/n: number of participants

Outcome	Metacognitive strategy training of planning abilities with ETAPP programme, Post-intervention, N = 27	Usual care, Post-intervention, N = 25
GAS (assessed by occupational therapists) No of events	n = 27; % = 100	n = 25; % = 100
-2 (goal attained much less than expected)	n = 9; % = 33.3	n = 6; % = 24

Outcome	Metacognitive strategy training of planning abilities with ETAPP programme, Post-intervention, N = 27	Usual care, Post-intervention, N = 25
No of events		
-1 (goal attained less than expected) No of events	n = 6; % = 22.2	n = 8; % = 32
0 (goal attained as expected) No of events	n = 3; % = 11.1	n = 5; % = 20
+1 (goal attained more than expected) No of events	n = 4; % = 14.8	n = 3; % = 12
+2 (goal attained much more than expected) No of events	n = 5; % = 18.5	n = 3; % = 12

ETAPP: evaluation of a therapeutic aid of the planning function in Prader-Willi syndrome; GAS: goal attainment scale; N/n: number of participants

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns *(No information on randomisation sequence or allocation concealment; no suggestion of problems with randomisation process (baseline characteristics similar between groups apart from statistically older participants in treatment group compared to control).)*

Section	Question	Answer
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	High *(Participants, carers and people delivering intervention probably blinded to group assignment. Naïve per-protocol analysis performed; 7/60 (11.7%) did not receive intervention after randomisation and were not included in the analysis.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	High *(Participants with GAS outcome data (as rated by participants) at post-intervention: intervention 24/30 (80.0%), control 22/30 (73.3%); participants with GAS outcome data (as rated by occupational therapist) at post-intervention: intervention 25/30 (83.3%), control 27/30 (90.0%); participants with GAS outcome data (as rated by carers) at post-intervention: intervention 11/30 (36.7%), control 15/30 (50.0%); sensitivity analysis or correction for bias analysis not presented; no information to judge if missingness of outcome likely to depend on true value.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(GAS rated by participants (some concerns): Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors probably aware of group allocation as self-reported measures by probably unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and control group received an active intervention. GAS rated by occupational therapists (low risk): Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors not aware of group allocation.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable

Section	Question	Answer
Overall bias and Directness	Risk of bias variation across outcomes	None identified

GAS: goal attainment scale

Herrmann, 2022

Bibliographic Reference	Herrmann, Christine; Schradt, Falk; Lindner-Pfleghar, Beate; Schuster, Joachim; Ludolph, Albert C; Dorst, Johannes; Pharyngeal electrical stimulation in amyotrophic lateral sclerosis: a pilot study.; Therapeutic advances in neurological disorders; 2022; vol. 15; 17562864211068394

Study details

Country/ies where study was carried out	Germany
Study type	Randomised controlled trial (RCT)
Study dates	March 2018 – April 2020
Inclusion criteria	- Possible, probable or diagnosed amyotrophic lateral sclerosis (as defined by the revised version of the El Escorial World Federation of Neurology criteria), - Combined upper motor neurone and lower motor neurone bulbar involvement, - Moderate to severe dysphagia (Penetration-Aspiration Scale of 4 or above in thin liquid, assessed using fibreoptic evaluation of swallowing), - Eligible for study participation.
Exclusion criteria	- Atypical phenotypes (for example, primary lateral sclerosis, progressive muscular atrophy, and progressive bulbar palsy,

	- Tracheostomy, severe psychiatric comorbidities, dementia, implanted pacemaker or cardiac defibrillator, or severe cardiopulmonary diseases.
Patient characteristics	N=20 adults with amyotrophic lateral sclerosis - Pharyngeal electrical stimulation and standard logopaedic therapy: n=10 - Standard logopaedic therapy: n=10 Age in years [Mean (SD) not reported] [Median (IQR)]: - Pharyngeal electrical stimulation plus standard logopaedic therapy: 76.0 (66.3-79.0) - Standard logopaedic therapy: 57.5 (50.3-69.3) Sex (M/F): - Pharyngeal electrical stimulation plus standard logopaedic therapy: n=5/n=5 - Standard logopaedic therapy: n=3/n=7 Time since diagnosis in months (reported as disease duration) [Mean (SD) not reported] [Median (IQR)]: - Pharyngeal electrical stimulation plus standard logopaedic therapy: 14.0 (6.5-17.5) - Standard logopaedic therapy: 10.0 (8.0-19.5) Chronic neurological disorder category: Progressive neurological diseases
Intervention(s)/control	**Intervention** Name: Pharyngeal electrical stimulation plus standard logopaedic therapy

	Protocol intervention group: Interventions for sustaining or improving capability in eating, drinking and swallowing – Neuromuscular electrical stimulation or pharyngeal stimulation, transcranial direct current or magnetic stimulation Delivery setting: Not reported Number/frequency of sessions: 3x daily sessions, duration 10-minutes Duration: 3 days Practitioner(s): 2x speech and language therapists and 1 medical student Performed using Phagenyx® device, including transnasal catheter with stimulation electrodes positioned in the pharynx. Electrical stimulation characteristics: frequency 5 Hz, duration 200 μs, intensity: individually determined for each participant but ranged 1-50 mA Participants also received standard logopaedic therapy as per comparison group **Control** Name: Standard logopaedic therapy Protocol description: Control (standard care) Delivery setting: Not reported Number/frequency of sessions: 3x daily sessions, 45-minutes each Duration: 3 days Practitioner(s): 2x speech and language therapists and 1 medical student Sessions included: restitutional procedures consisting of Orofacial Regulation Therapy, Facio-oral Tract Therapy, voice training, respiratory training, and manual training for sensory-motor perception and economic use of remaining functions; compensatory procedures including postural changes (for example, chin tucks) and specific swallowing techniques (for example, supraglottic swallowing) as per national guidelines for neurogenic dysphagia; adaptive procedures including adaptation of eating and drinking and aids (for example, cup with nose recess).
Duration of follow-up	3 months

Sources of funding	Industry funded
Sample size	N=20 Pharyngeal electrical stimulation and standard logopaedic therapy: n=10 Standard logopaedic therapy: n=10

ADL: activities of daily living; ALSFRS-R: revised amyotrophic lateral sclerosis functional rating scale; Hz: hertz; IQR: interquartile range; mA: milliamps; N/n: number of participants; RCT: randomised controlled trial; µs: microseconds

Outcomes

Study timepoints

- Baseline
- 1 day follow-up
- 4 days follow-up
- 1 month follow-up
- 3 months follow-up

Pharyngeal electrical stimulation plus standard logopaedic therapy versus standard logopaedic therapy: Functional independence

Functional independence as measured by ALSFRS-R - Polarity - Higher values are better

Outcome	Pharyngeal electrical stimulation and standard logopaedic therapy, 1 day follow-up, N = NR	Pharyngeal electrical stimulation and standard logopaedic therapy, 4 days follow-up, N = 9	Pharyngeal electrical stimulation and standard logopaedic therapy, 1 month follow-up, N = 7	Pharyngeal electrical stimulation and standard logopaedic therapy, 3 months follow-up, N = 4	Standard logopaedic therapy, 1 day follow-up, N = NR	Standard logopaedic therapy, 4 days follow-up, N = 8	Standard logopaedic therapy, 1 month follow-up, N = 10	Standard logopaedic therapy, 3 months follow-up, N = 9
ALSFRS-R Median (IQR)	NR (NR to NR)	0 (-3 to 2)	-1.5 (-6.8 to 1.5)	-0.5 (-1 to 1.5)	NR (NR to NR)	0 (-1 to 2)	-1 (-4 to 0)	-1 (-7.5 to -0.5)

ALSFRS-R: revised amyotrophic lateral sclerosis functional rating scale; IQR: interquartile range; N/n: number of participants; NR: not reported

Pharyngeal electrical stimulation plus standard logopaedic therapy versus standard logopaedic therapy: Swallowing related quality of life

Swallowing related quality of life as measured by SWQoL - Polarity - Higher values are better

Outcome	Pharyngeal electrical stimulation and standard logopaedic therapy, 1 day follow-up, N = 9	Pharyngeal electrical stimulation and standard logopaedic therapy, 4 days follow-up, N = 9	Pharyngeal electrical stimulation and standard logopaedic therapy, 1 month follow-up, N = 7	Pharyngeal electrical stimulation and standard logopaedic therapy, 3 months follow-up, N = 4	Standard logopaedic therapy, 1 day follow-up, N = 10	Standard logopaedic therapy, 4 days follow-up, N = 8	Standard logopaedic therapy, 1 month follow-up, N = 10	Standard logopaedic therapy, 3 months follow-up, N = 9
SWQoL Median (IQR)	9.5 (-3.8 to 24)	0.5 (-17 to 16)	-6 (-12 to 8.5)	4 (4 to 9)	-2 (-11 to 13)	3 (-17 to 21)	0 (-17 to 11)	-4 (-36 to 3.3)

IQR: interquartile range; N/n: number of participants; SWQoL: swallowing related quality of life

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	High *(External pseudorandom number generator; allocation probably not concealed as randomisation not external and paper states it was unblinded; no suggestion of problems with randomisation process (baseline characteristics similar between groups apart from statistically older participants in treatment group compared to control).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low *(No information on blinding of participants, carers and people delivering intervention but nature of intervention and control hard to blind against; probably no deviations from intended intervention due to trial context. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	High *(Participants with outcome data at 3 months: intervention 4/10 (40%), control 9/10 (90%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome likely to depend on true value as rates of loss to follow up different across groups.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	High *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors probably aware of group allocation as self-reported measures by probably unblinded participants; outcome measurement likely to be influenced by knowledge of group allocation as subjective measurements, control group did not receive an intervention, and researchers unblinded.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable

Section	Question	Answer
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Jiménez-Barrios, 2023

Bibliographic Reference	Jiménez-Barrios, Maria; Gonzalez-Bernal, Jeronimo; Cubo, Esther; Gabriel-Galan, Jose Maria; Garcia-Lopez, Beatriz; Berardi, Anna; Tofani, Marco; Galeoto, Giovanni; Matthews, Martin J A; Santamaria-Pelaez, Mirian; Gonzalez-Santos, Josefa; Functionality and Quality of Life with Parkinson's Disease after Use of a Dynamic Upper Limb Orthosis: A Pilot Study.; International journal of environmental research and public health; 2023; vol. 20 (no. 6)

Study details

Country/ies where study was carried out	Spain
Study type	Randomised controlled trial (RCT)
Study dates	September - October 2021
Inclusion criteria	- Diagnosed with Parkinson's disease (as defined by International Parkinson and Movement Disorder Society criteria) resulting in tremor and rigidity in at least 1 upper limb, - People with at least 2 out of the following: • Resting tremor, • Significant improvement with dopaminergic therapy, • Dyskinesias as a consequence of levodopa or olfactory loss, • Cardiac sympathetic denervation on myocardial scintigraphy.
Exclusion criteria	- People with tremor resulting from another associated disease (as judged by neurologist),

	- People with Montreal Cognitive Assessment score of 26 or below.
Patient characteristics	N=40 adults with Parkinson's disease - Dynamic elastomeric fabric orthosis for upper limb: n=20 - Waitlist control: n=20 Age in years [Mean (SD)]: - Dynamic elastomeric fabric orthosis for upper limb: 72.18 (5.58) - Waitlist control: 69.55 (12.31) Sex (M/F): - Dynamic elastomeric fabric orthosis for upper limb: n=15/n=7 - Waitlist control: n=15/n=3 Time since diagnosis in years (reported as disease evolution) [Mean (SD)]: - Dynamic elastomeric fabric orthosis for upper limb: 5.91 (4.52) - Waitlist control: 4.72 (3.86) Chronic neurological disorder category: Progressive neurological diseases
Intervention(s)/control	**Intervention** Name: Dynamic elastomeric fabric orthosis for upper limb

	Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment – Interventions for upper limb function Delivery setting: Not reported Number/frequency of sessions: Not applicable Duration: 2 months Practitioner(s): Not reported Participants wore a dynamic elastomeric fabric orthosis on their most affected upper limb for study period. The orthosis is custom-designed and apply traction forces to better biomechanically align the limb, allowing and guiding movement. The use of elastic fabric promotes finger and wrist extension, as well as stabilising the thumb and supination or protonation of the forearm. Localised compression of soft tissue and stimulation of skin and proprioceptive receptors also allows regulation of motor activity, and prevention of atrophy and rigidity. Note: Participants in both groups continued their dopaminergic treatment regime throughout the study period. **Control** Name: Waitlist control Protocol description: Control (waitlist) Delivery setting: Not applicable Number/frequency of sessions: Not applicable Duration: 2 months Practitioner(s): Not applicable Participants instructed to live life as normal and received intervention as per intervention group when study period was over. Note: Participants in both groups continued their dopaminergic treatment regime throughout the study period.
Duration of follow-up	Post-intervention

Sources of funding	Not industry funded
Sample size	N=40 Dynamic elastomeric fabric orthosis for upper limb: n=20 Waitlist control: n=20
Other information	Functional independence (UPDRS II) also reported. However, there were concerns with the data being presented (mainly 2 reported mean and SD being 0.00 and 0.00, which is not correct) meaning statistical analysis could not be performed.

ADL: activities of daily living; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation; UPDRS II: unified Parkinson's disease rating scale part 2

Outcomes

Study timepoints

- Baseline
- Post-intervention

Dynamic elastomeric fabric orthosis for upper limb versus waitlist control: Physical and mental health related quality of life

Physical and mental health related quality of life as measured by PDQ-39 - Polarity - Higher values are better

Outcome	Dynamic elastomeric fabric orthosis for upper limb, Post-intervention vs Baseline, N = 22	Waitlist control, Post-intervention vs Baseline, N = 16
PDQ-39 Mean (SD)	-0.63 (6.83)	-0.82 (8.31)

N/n: number of participants; PDQ-39: Parkinson's disease questionnaire; SD: standard deviation

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns *(Epidat 4.2 programme randomisation sequence; no information on allocation concealment or suggestion of problems with randomisation process (baseline characteristics presented and look visually similar but discrepancies in the group size stated (20 participants in each group) and numbers accounted for in characteristics table (n=18 in treatment group and n=22 in control group)).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	High *(Participants, carers and people delivering intervention unblinded to group assignment; no information on deviations from intended intervention due to trial context. Probably naïve per-protocol analysis performed despite reporting intention to treat (n=22 in the intervention group and n=16 in the control group at post-intervention, when should be 20 per group); if per-protocol analysis was performed, 4/40 (10.0%) would have been analysed in the incorrect group.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low *(No loss to follow up reported.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	High *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors aware of group allocation as self-reported measures by unblinded participants; outcome measurement likely to be influenced by knowledge of group allocation as subjective measurements, control group did not receive an intervention, and researchers unblinded.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*

Section	Question	Answer
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

N/n: number of participants

Kos, 2016

Bibliographic Reference	Kos, Daphne; Duportail, Marijke; Meirte, Jill; Meeus, Mira; D'hooghe, Marie B; Nagels, Guy; Willekens, Barbara; Meurrens, Tom; Ilsbroukx, Stephan; Nijs, Jo; The effectiveness of a self-management occupational therapy intervention on activity performance in individuals with multiple sclerosis-related fatigue: a randomized-controlled trial.; International journal of rehabilitation research. Internationale Zeitschrift fur Rehabilitationsforschung. Revue internationale de recherches de readaptation; 2016; vol. 39 (no. 3); 255-62

Study details

Country/ies where study was carried out	The Netherlands
Study type	Randomised controlled trial (RCT)
Study dates	2011 - 2014
Inclusion criteria	- Diagnosed with multiple sclerosis (as defined by neurologist), - People who were ambulatory (defined by expanded disability status scale of 5 or below) and with a high impact of fatigue (defined as visual analogue scale of 60 or above), - Aged between 18-65 years old,

	- Able to speak Dutch.
Exclusion criteria	- Undergoing rehabilitation or due to be during study, - Pregnant, - Relapse within 3 months of study, - Severe cognitive comorbidities (as judged by neurologist).
Patient characteristics	N=31 adults with multiple sclerosis - Self-management occupational therapy intervention programme: n=17 - Relaxation therapy: n=14 Age in years [Mean (SD)]: - Self-management occupational therapy programme: 37.0 (8.2) - Relaxation therapy: 44.0 (8.9) Sex (M/F): Not reported Time since diagnosis: Not reported Chronic neurological disorder category: Progressive neurological diseases
Intervention(s)/control	**Intervention** Name: Self-management occupational therapy programme

	Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Overall approaches Delivery setting: Not reported Number/frequency of sessions: 3x weekly sessions, duration 60-90-minutes. Duration: 3 weeks Practitioner(s): Occupational therapist Programme includes strategies to help participants complete activities of daily living within their available energy levels, hopefully increasing their independence and self-efficacy. Before therapy starts, participants complete an activity diary for a week to help fatigue awareness. They also receive an information booklet with education materials. The first session focuses on balancing daily activities (including all responsibilities and goals for personal and childcare, domestic chores, productivity, and leisure activities) within the limits of their energy levels. These daily activities were personalised to each participant and extracted from the COPM performance measure baseline assessment. The remaining 2 sessions focused on performance evaluation, practicing alternative activities, and skill transfer. **Control** Name: Relaxation therapy Protocol description: Placebo (attention control) Delivery setting: Not reported Number/frequency of sessions: 3x weekly sessions, duration 60-90 minutes Duration: 3 weeks Practitioner(s): Physical therapist Programme included educating participants on stress management within multiple sclerosis, and practicing relaxation techniques (for example, visualisation). Participants also received an education booklet and completed a stress-reaction diary to inform coping techniques for future stressful events.
Duration of follow-up	3 months

Sources of funding	Not industry funded
Sample size	N=31 Self-management occupational therapy intervention programme: n=17 Relaxation therapy: n=14
Other information	QoL (SF-36) sub-scale scores also reported (including pain sub-scale) but not extracted as not in protocol.

ADL: activities of daily living; COPM: Canadian occupational performance measure; N/n: number of participants; QoL: quality of life; RCT: randomised controlled trial; SD: standard deviation; SF-36: 36-item short form survey

Outcomes

Study timepoints

- Baseline
- Post-intervention
- 3 months follow-up

Self-management occupational therapy programme versus relaxation therapy: Functional independence

Functional independence as measured by COPM performance - Polarity - Higher values are better

Functional independence as measured by COPM satisfaction - Polarity - Higher values are better

Outcome	Self-management occupational therapy programme, Post-intervention vs Baseline, N = 14	Self-management occupational therapy programme, 3 months follow-up vs Baseline, N = 14	Relaxation therapy, Post-intervention vs Baseline, N = 11	Relaxation therapy, 3 months follow-up vs Baseline, N = 11
COPM performance Mean (SD)	2.3 (1.26)	2.5 (1.27)	1 (1.45)	1 (1.49)

Outcome	Self-management occupational therapy programme, Post-intervention vs Baseline, N = 14	Self-management occupational therapy programme, 3 months follow-up vs Baseline, N = 14	Relaxation therapy, Post-intervention vs Baseline, N = 11	Relaxation therapy, 3 months follow-up vs Baseline, N = 11
COPM satisfaction Mean (SD)	1.5 (1.39)	2.1 (1.13)	0.9 (1.53)	1.2 (1.57)

COPM: Canadian occupational performance measure; N/n: number of participants; SD: standard deviation

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Random selection of folded paper randomisation sequence; independent researcher used for allocation concealment; no suggestion of problems with randomisation process (baseline characteristics similar between groups apart from statistically younger participants in treatment group compared to control).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Some concerns *(Participants, carers and people delivering intervention unblinded to group allocation; probably no deviations from intended intervention due to trial context. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Some concerns *(Participants with outcome data at 3 months: intervention 14/17 (82.4%), control 11/14 (78.6%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome could depend on true value but unlikely as rates of and reasons for loss to follow up similar across groups. (Low risk) Participants with outcome data at post-intervention: intervention 17/17 (100%), control 13/14 (92.9%).)*

Section	Question	Answer
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors aware of group allocation as self-reported measures by unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and researchers were blinded to group allocation.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	High *(No information on pre-specified analysis plan; all scales and time points; intention to treat analysis performed but results not reported beyond stating they were similar to completers.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Lannin, 2014

Bibliographic Reference	Lannin, Natasha; Carr, Belinda; Allaous, Jeanine; Mackenzie, Bronwyn; Falcon, Alex; Tate, Robyn; A randomized controlled trial of the effectiveness of handheld computers for improving everyday memory functioning in patients with memory impairments after acquired brain injury.; Clinical rehabilitation; 2014; vol. 28 (no. 5); 470-81

Study details

Country/ies where study was carried out	Australia
Study type	Randomised controlled trial (RCT)

Study dates	November 2006 - December 2009
Inclusion criteria	- Diagnosis of acquired brain injury and with functional memory impairment (assessed using Rivermead Behavioural Memory Test), - Aged 17 years old or above, - People emerged from post-traumatic amnesia, - Enough hand function to use a personal digital assistant.
Exclusion criteria	Not reported
Patient characteristics	N=42 adults with acquired brain injury - Personal digital assistant: n=21 - Non-electronic memory aid: n=21 Age in years [Mean (SD)]: - Personal digital assistant: 32.4 (11.0) - Non-electronic memory aid: 34.7 (12.1) Sex (M/F): - Personal digital assistant: n=14/n=7 - Non-electronic memory aid: n=12/n=9 Time since injury in days (reported as time post-impairment) [Mean (SD)]: - Personal digital assistant: 2363.9 (2467.5)

	- Non-electronic memory aid: 4379.8 (6225.45) Chronic neurological disorder category: Acquired brain injury
Intervention(s)/control	**Intervention** Name: Personal digital assistant Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Interventions for community living skills Delivery setting: Specialist brain injury rehabilitation hospital (inpatients and outpatients) Number/frequency of sessions: Not specified beyond they were consistent with usual practice in brain injury unit Duration: 8 weeks Practitioner(s): Neurological occupational therapist Participants given personal digital assistant (including alarm, calendar, address book and camera but without telephone capability) and were supported in using them. Individuals were given a choice between Windows personal digital assistance software or Macintosh digital assistant software. The first session was used to jointly prioritise meaningful activities (for example, taking medication, grocery shopping, or transportation) that participants wanted to increase independence in. Training consisted of 5 structured modules (focusing on a selection of appropriate digital assistants, awareness of deficits training, basic digital assistant skills, and organisational strategies, and generalisation of skills to real life situations), and participants were permitted to take as long as they needed to complete each module. Caregivers were involved in training sessions if possible and appropriate. **Control** Name: Non-electronic memory aid Protocol description: Control (usual care) Delivery setting: Specialist brain injury rehabilitation hospital (inpatients and outpatients) Number/frequency of sessions: Not specified beyond they were consistent with usual practice in brain injury unit

	Duration: 8 weeks Practitioner(s): Neurological occupational therapist Participants used non-electronic memory aids and experienced the same prioritisation of meaningful activities task during standard occupational therapy sessions, to ensure similar goal-directed rehabilitation. Participants received individual and group training on how to use non-electronic memory strategies (for example, paper diaries, list making, cueing strategies, mnemonics). They were also asked not to use any electronic devices (including, alarms on mobile phones or pagers) throughout the study period.
Duration of follow-up	Post-intervention
Sources of funding	Not industry funded
Sample size	N=42 Personal digital assistant: n=21 Non-electronic memory aid: n=21

ADL: activities of daily living; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- Post-intervention

Personal digital assistance versus non-electronic memory aid: Personal goal attainment

Personal goal attainment as measured by GAS t-score - Polarity - Higher values are better

Outcome	Personal digital assistant, Post-intervention vs Baseline, N = 21	Non-electronic memory aid, Post-intervention vs Baseline, N = 21
GAS t-score Mean (SD)	39.8 (14.8)	38.6 (12.07)

GAS: goal attainment scale; N/n: number of participants; SD: standard deviation

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Computer generated randomisation sequence; allocation concealed using independent researcher and off-site storage; no suggestion of problems with randomisation process (statistical analysis not presented but study states baseline characteristics similar between groups apart from more university education participants in treatment group compared to control).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Some concerns *(Participants, carers and people delivering intervention unblinded to group allocation; no information on deviations from intended intervention due to trial context. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low *(No loss to follow up reported.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors aware of group allocation as self-reported measures by unblinded participants; outcome measurement could be influenced by knowledge of group*

Section	Question	Answer
		allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and researchers were blinded to group allocation.)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	Some concerns
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Latella, 2022

Bibliographic Reference	Latella, Desiree; Maggio, Maria Grazia; Maresca, Giuseppa; Andaloro, Adriana; Anchesi, Smeralda; Pajno, Valentina; De Luca, Rosaria; Di Lorenzo, Giuseppe; Manuli, Alfredo; Calabro, Rocco Salvatore; Effects of domotics on cognitive, social and personal functioning in patients with Parkinson's disease: A pilot study.; Assistive technology : the official journal of RESNA; 2022; vol. 34 (no. 4); 423-428

Study details

Country/ies where study was carried out	Italy
Study type	Randomised controlled trial (RCT)
Study dates	June 2017 - March 2019
Inclusion criteria	- Diagnosis of Parkinson's disease (as defined by Movement Disorder Society Clinical Diagnostic Criteria for Parkinson's disease),

	- Score of less than 3 on Hoehn and Yahr Scale and less than 50 on Unified Parkinson's Disease Rating Scale, - Without any severe auditory or visual disabilities that might affect training, - On stable therapy for at least 6 months before the start of the study, - No severe cognitive impairment (as defined by a Montreal Cognitive Assessment score below 18).
Exclusion criteria	- Aged over 85 years old, - Severe medical or neuropsychiatric comorbidities that might affect training, - Receiving psychoactive drug treatment in the previous 6 months.
Patient characteris-tics	N=40 adults with Parkinson’s disease - Home automation training: n=20 - Traditional training: n=20 Age in years [Mean (SD)]: - Home automation training: 67.2 (7.0) - Traditional training: 67.4 (7.6) Sex (M/F): - Home automation training: n=11/n=9 - Traditional training: n=11/n=9 Time since diagnosis in years (reported as disease duration) [Mean (SD)]:

	- Home automation training: 9.8 (3.4) - Traditional training: 8.9 (3.4) Chronic neurological disorder category: Progressive neurological diseases
Intervention(s)/control	**Intervention** Name: Home automation training Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment – Technological interventions Delivery setting: Specialist neurorehabilitation unit (inpatient or outpatient not specified) Number/frequency of sessions: 3x sessions per week (totalling 24 sessions), duration 60-minutes Duration: 8 weeks Practitioner(s): Occupational therapist Training delivered in groups of 3-5 participants, with participants performing activities of daily living in a home automation room. The room had a centralised control system allowing people to modify the environment in response to a variety of stimuli (for example, smoke detection or water leaks). The room also included a variety of easy to use tools (for example, multi-purpose chopping boards for one handed use, and folding cutlery) and could be adapted to an individual's needs (for example, kitchen cabinets could change height and dept, the sink had axial automation, and there was an adaptable toilet and shower). **Control** Name: Traditional training Protocol description: Control (standard care) Delivery setting: Specialist neurorehabilitation unit (inpatient or outpatient not specified) Number/frequency of sessions: 3x sessions per week (totalling 24 sessions), duration 60-minutes

	Duration: 8 weeks Practitioner(s): Occupational therapist Training delivered in groups of 3-5 participants, with participants performing activities designed to increase independence in activities of daily living (for example, positioning marbles, manipulating buttons or hinges), as well as daily activities themselves (for example, cooking tasks).
Duration of follow-up	Post-intervention
Sources of funding	No funding received
Sample size	N=40 Home automation training: n=20 Traditional training: n=20

ADL: activities of daily living; IQR: interquartile range; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- Post-intervention

Home automation training versus traditional training: Functional independence

Functional independence as measured by ADL - Polarity - Higher values are better

Functional independence as measured by IADL - Polarity - Higher values are better

Outcome	Home automation training, Baseline, N = 20	Home automation training, Post-intervention, N = 20	Traditional training, Baseline, N = 20	Traditional training, Post-intervention, N = 20
ADL Median (IQR)	4 (3 to 5)	5 (4.7 to 6)	5.5 (5 to 6)	5 (4 to 6.2)
IADL Median (IQR)	5 (4 to 6)	7 (5.7 to 7.2)	5 (5 to 6)	6 (5.7 to 6)

ADL: activities of daily living; IADL: instrumental activities of daily living scale; IQR: interquartile range; N/n: number of participants

Home automation training versus traditional training: Physical and mental health related quality of life

Physical and mental health related quality of life as measured by SF-12 - Polarity - Higher values are better

Outcome	Home automation training, Baseline, N = 20	Home automation training, Post-intervention, N = 20	Traditional training, Baseline, N = 20	Traditional training, Post-intervention, N = 20
SF-12 Median (IQR)	28.5 (24.7 to 32)	34 (28.7 to 37.2)	31 (25 to 33.2)	29.5 (25.5 to 34.2)

IQR: interquartile range; N/n: number of participants; SF-12: 12-item short form survey

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns *(Computer generated randomisation sequence; no information on allocation concealment; no suggestion of problems with randomisation process (baseline characteristics similar between groups).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low *(No information on blinding of participants, carers and people delivering intervention but nature of intervention and control hard to blind; probably no deviations from intended intervention due to trial context. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low *(No loss to follow up reported.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors probably aware of group allocation as self-reported measures by probably unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and control group received an active intervention.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	Some concerns
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Miller, 2016

Bibliographic Reference	Miller, L; van Wijck, F; Lamont, L; Preston, J; Hair, M; Sensory dynamic orthoses in mild to moderate upper limb tremor in multiple sclerosis: a mixed methods feasibility study.; Clinical rehabilitation; 2016; vol. 30 (no. 11); 1060-1073

Study details

Country/ies where study was carried out	UK
Study type	Randomised controlled trial (RCT)
Study dates	Not reported
Inclusion criteria	- Diagnosis of multiple sclerosis that was currently stable (defined as no disability progression within last 3 months), - Mild to moderate intention tremor in at least 1 upper limb (as defined by a score of 1-3 on clinical tremor rating scale), - Receiving stable rehabilitation and medication within last 30 days.
Exclusion criteria	- Moderate to severe cognitive impairment (defined as a score of less than 24 on Montreal Cognitive Assessment), - Other neurological comorbidities that could present with a tremor, - History of sensory dynamic orthoses for tremor.
Patient characteristics	N=21 adults with multiple sclerosis - Sensory dynamic orthosis arm sleeve: n=11 - Non-compressive pro-Tem arm sleeve: n=10 Age in years [Median (IQR)] [1]: - Sensory dynamic orthosis arm sleeve: 44.5 (22.0)

	- Non-compressive pro-Tem arm sleeve: 52.0 (11.0) Sex (M/F) [1]: - Sensory dynamic orthosis arm sleeve: n=2/n=9 - Non-compressive pro-Tem arm sleeve: n=4/n=4 Time since diagnosis in years [Median (IQR)] [1]: - Sensory dynamic orthosis arm sleeve: 7 (15) - Non-compressive pro-Tem arm sleeve: 7 (10) Chronic neurological disorder category: Progressive neurological disease [1]Only reported for 8 participants in control group.
Intervention(s)/control	**Intervention** Name: Sensory dynamic orthosis arm sleeve Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment – Interventions for upper limb function Delivery setting: Not reported Number/frequency of sessions: Wear time started from 1-hour on day 1, increasing by 1-hour a day, until 8-hours per day. Sleeve worn 6 days per week. Duration: 9 weeks Practitioner(s): Orthotist

	Sensory dynamic orthosis arm sleeve, a class 1 medical device weighing 275 g/m2. Directional stretch and increased sensory and proprioceptive feedback is permitted through panelling. Participants were measured for the orthosis and fitted 2 weeks later. Sleeves ran from wrist crease to 5 cm below axilla but did not cover the hand. **Control** Name: Non-compressive pro-Tem arm sleeve Protocol description: Placebo Number/frequency of sessions: Wear time started from 1-hour on day 1, increasing by 1-hour a day, until 8-hours per day. Sleeve worn 6 days per week. Duration: 9 weeks Practitioner(s): Orthotist Pro-Tem arm sleeve, a class 1 medical device weighing 265 g/m2. Directional stretch not possible due to 1 seam located along lateral border of arm. Participants were measured for the orthosis and fitted 2 weeks later. Sleeves ran from wrist crease to 5 cm below axilla but did not cover the hand.
Duration of follow-up	Post-intervention
Sources of funding	No funding received
Sample size	N=21 Sensory dynamic orthosis arm sleeve: n=11 Non-compressive pro-Tem arm sleeve: n=10

ADL: activities of daily living; cm: centimetres; g: grams; COPM: Canadian occupational performance measure; IQR: interquartile range; m: metres; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Baseline

- Post-intervention

Sensory dynamic orthosis arm sleeve versus non-compressive pro-Tem arm sleeve: Functional independence

Functional independence as measured by COPM performance - Polarity - Higher values are better

Functional independence as measured by COPM satisfaction - Polarity - Higher values are better

Outcome	Sensory dynamic orthosis arm sleeve, Baseline, N = 11	Sensory dynamic orthosis arm sleeve, Post-intervention, N = 11	Non-compressive pro-Tem arm sleeve, Baseline, N = 8	Non-compressive pro-Tem arm sleeve, Post-intervention, N = 8
COPM performance Median (IQR[1])	3.8 (0.8 to NR)	3.4 (1 to NR)	3.7 (1.3 to NR)	5 (4.3 to NR)
COPM satisfaction Median (IQR)	3.7 (1.3 to NR)	3.7 (1.3 to NR)	2.9 (1.9 to NR)	4.6 (5.6 to NR)

COPM: Canadian occupational performance measure; IQR: interquartile range; N/n: number of participants; NR: not reported
1 IQR incorrectly reported in paper as 1 value rather than a range between 2

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	High *(Selection of opaque envelopes randomisation sequence; no information on allocation concealment; possible suggestion of problems with randomisation process (statistically higher percentages of progressive multiple sclerosis and tremor rating*

Section	Question	Answer
		scores in treatment group compared to control, and non-significantly higher scores of Nine-hole peg test in treatment group compared to control).)
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Some concerns *(Participants blinded to group assignment; no information on blinding of people delivering intervention but unlikely as overseeing fitting of orthoses; probably no deviations from intended intervention due to trial context. Naïve per-protocol analysis performed; 2/40 (5.0%) did not receive intervention after randomisation and were not included in the analysis.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Some concerns *(Participants with outcome data at post-intervention: intervention 9/11 (81.8%), control 8/10 (90.0%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome could depend on true value but unlikely as rates of and reasons for loss to follow up similar across groups.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Low *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors unaware of group allocation.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	Some concerns
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Ownsworth, 2017

Bibliographic Reference	Ownsworth, Tamara; Fleming, Jennifer; Tate, Robyn; Beadle, Elizabeth; Griffin, Janelle; Kendall, Melissa; Schmidt, Julia; Lane-Brown, Amanda; Chevignard, Mathilde; Shum, David H K; Do People With Severe Traumatic Brain Injury Benefit From Making Errors? A Randomized Controlled Trial of Error-Based and Errorless Learning.; Neurorehabilitation and neural repair; 2017; vol. 31 (no. 12); 1072-1082

Study details

Country/ies where study was carried out	Australia
Study type	Randomised controlled trial (RCT)
Study dates	July 2013 - July 2016
Inclusion criteria	- Diagnosis of severe traumatic brain injury (as defined by post-traumatic amnesia and Glasgow Coma Scale), - People exhibiting dysexecutive impairments (as assessed by study clinicians at initial screening) that needed community support, - Assessed to be medically stable and out of post-traumatic amnesia, - Aged 18 to 70 years old, - Residing within 50 km radius of study centres.
Exclusion criteria	- Unable to provide informed consent, - Severe behavioural, motor, sensory perceptual, language, or cognitive impairments, - Psychiatric or mood comorbidities that were not being effectively managed.
Patient characteristics	N=54 adults with traumatic brain injury - Error-based learning: n=27 - Errorless learning: n=27

	Age in years [Mean (SD)]: - Error-based learning: 37.37 (13.6) - Errorless learning: 37.86 (13.3) Sex (M/F): - Error-based learning: n=20/n=7 - Errorless learning: n=23/n=4 Time since diagnosis in years [Mean (SD)]: - Error-based learning 36.44 (45.8) - Errorless learning 40.81 (49.3) Chronic neurological disorder category: Acquired brain injury
Intervention(s)/control	**Intervention** Name: Error-based learning Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Overall approaches Delivery setting: Not reported Number/frequency of sessions: 1x weekly sessions, duration 90-minutes Duration: 8 weeks

	Practitioner(s): 4x occupational therapists Participants spent the first 4 sessions learning to prepare a stir-fry meal. Participants spent the last 4 sessions learning a set of multiple tasks or a complex multi-step task directly related to their rehabilitation goals (for example, household chores, errands in a shopping centre, or computer skills training). Error-based learning adopted a top-down, metacognitive approach to improve self-awareness, self-monitoring, and self-regulation. Occupational therapists allowed structured opportunities for participants to make errors and self-correct these without intervention from professionals. They were introduced to the Stop, Check, and Notice (SCaN) strategy, reflected on their performance throughout the sessions, and identified strategies and goals for further improvement. As sessions progressed, therapists became less involved in tasks and gave fewer prompts. **Control** Name: Errorless learning Protocol description: Intervention from the same group (interventions to develop skills for adaptive functioning or functional task training – overall approaches) Delivery setting: Not reported Number/frequency of sessions: 1x weekly sessions (totalling 8 sessions), duration 90-minutes Duration: 8 weeks Practitioner(s): 4x occupational therapists Participants spent the first 4 sessions learning to prepare a stir-fry meal. Participants spent the last 4 sessions learning a set of multiple tasks or a complex multi-step task directly related to their rehabilitation goals (for example, household chores, errands in a shopping centre, or computer skills training). Errorless learning adopted a bottom-up, task-specific approach to perform error-free activities after observing and practicing only the correct actions. Occupational therapists modelled each step to prevent participants from making mistakes and gave verbal and physical guidance throughout the task performance. If an error is made, therapists immediately show the correct version and describe the action. Verbal prompts continue throughout learning, although therapist modelling and physical recreation decreases.
Duration of follow-up	6 months
Sources of funding	Not industry funded

Sample size	N=54 Error-based learning: n=27 Errorless learning: n=27

ADL: activities of daily living; km: kilometres; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- Post-intervention
- 6 months follow-up

Error-based learning versus errorless learning: Functional independence

Functional independence as measured by SPRS - Polarity - Higher values are better

Outcome	F statistic between group effect
SPRS	At post-intervention: F = 0.013, p-value > 0.05 Error-based learning, Post-intervention, N = 25 Errorless learning, Post-intervention, N = 25
	At 6 months follow-up: F statistic between group effect: F = 0.574, p value > 0.05 Error-based learning, 6 months follow-up, N = 21 Errorless learning, 6 months follow-up, N = 20

N/n: number of participants; SPRS: Sydney psychosocial reintegration scale

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Computer generated randomisation sequence; allocation concealed using appropriate envelopes and independent researcher; no suggestion of problems with randomisation process (statistical analysis not presented but study states baseline characteristics similar between groups).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low *(Participants, carers and people delivering intervention unblinded to group allocation; no deviations from intended intervention due to trial context as per therapist adherence to protocol. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low *(Participants with outcome data at post-intervention: intervention 25/27 (92.6%), control 25/27 (92.7%); participants with outcome data at 6 months: intervention 21/27 (77.8%), control 20/27 (74.1%); correction for bias analysis presented.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors aware of group allocation as self-reported measures by unblinded caregivers; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, researchers were blinded to group allocation, and control group received an active intervention.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low *(Analysis as per protocol which was published online probably before outcome data was available; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	Some concerns
Overall bias and Directness	Overall Directness	Directly applicable

Section	Question	Answer
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Patt, 2023

Bibliographic Reference	Patt, Nadine; Kupjetz, Marie; Kool, Jan; Hersche, Ruth; Oberste, Max; Joisten, Niklas; Gonzenbach, Roman; Nigg, Claudio Renato; Zimmer, Philipp; Bansi, Jens; Effects of inpatient energy management education and high-intensity interval training on health-related quality of life in persons with multiple sclerosis: A randomized controlled superiority trial with six-month follow-up.; Multiple sclerosis and related disorders; 2023; vol. 78; 104929

Study details

Country/ies where study was carried out	Switzerland
Study type	Randomised controlled trial (RCT)
Study dates	July 2020 - October 2021
Inclusion criteria	- Diagnosis of multiple sclerosis (as defined by the revised McDonald criteria), relapsing-remitting, primary, or secondary progressive phenotypes, - Expanded Disability Status Scale score of 6.5 or less and Fatigue Scale for Motor and Cognitive Functions score of 43 or higher, - Aged over 18 years old, - Able to read and understand German language.
Exclusion criteria	- Cognitive impairment (as defined by Mini-Mental State Examination score of less than 21), depression (as defined by Hospital Anxiety and Depression Scale depression subscale score of less than 11), cardiopulmonary comorbidities, other neurodegenerative disorder comorbidities, and concomitant infections,

	- Pregnant or intending to become pregnant, - Received stem cell treatment within previous 6 months, - Previously participating in an inpatient energy management education or high-intensity interval training study.
Patient characteristics	N=106 adults with multiple sclerosis - Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme: n=53 - Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: n=53 Age in years [Mean (SD)]: - Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme: 49.98 (10.90) - Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: 49.51 (8.81) Sex (M/F): - Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme: n=19/n=34 - Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: n=16/n=37 Time since diagnosis in years [Mean (SD)]: - Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme: 15.02 (9.35)

	- Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: 11.79 (8.37) Chronic neurological disorder category: Progressive neurological diseases
Intervention(s)/control	**Intervention** Name: Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Overall approaches Delivery setting: Inpatient Number/frequency of sessions: 2x inpatient energy management education sessions per week (totalling 6 sessions), duration 60-minutes and 3x high-intensity interval training sessions per week (totalling 9 sessions), duration 21.5-minutes. Duration: 3 weeks Practitioner(s): Multiple sclerosis-experienced occupational therapists and physiotherapists Inpatient energy management education focused on teaching people with multiple sclerosis and fatigue how to manage their energy resources efficiently. Initial individual session where participants analysed their energy use, with 5 remaining sessions taking place in a group setting. Topics included break management, occupational balance, body use and environment, simplification of tasks, and communication. Participants also received an individual session at the end of the intervention to set goals once back at home. High-intensity interval training consisted of 5x 1.5 minutes high-intensity cycling intervals at 80-100 revolutions per minute, followed by 2-minute active recovery where rate decreased to 20 watts. The goal was to reach 95-100% of peak heart rate during intervals. Participants also completed a 3-minute warm-up and cool-down. Participants received a reinforcement letter 6 weeks post-discharge, reminding them of the goals they set at the end of the inpatient stay, encouraging them to continue exercising, and applying energy conservation techniques. Both groups received 3-week multidisciplinary inpatient rehabilitation programme that included: physiotherapy for balance and walking ability (5 sessions per week, 30-60-minutes duration), strength training (3 sessions per week, 30-45-

	minutes duration), occupational therapy for activities of daily living (2-3 sessions per week, 30 minutes duration), neuropsychology for cognition (2 sessions per week, 30-minutes duration), social counselling, and physician consultations. **Control** Name: Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme Protocol description: Control (usual care) Note: Study reports this as usual care for study clinic Delivery setting: Inpatient Number/frequency of sessions: 2x progressive muscle relaxation sessions per week (totalling 6 sessions), duration 60-minutes and 3x moderate continuous training sessions per week (totalling 9 sessions), duration 30-minutes. Duration: 3 weeks Practitioner(s): Multiple sclerosis-experienced occupational therapists and physiotherapists Progressive muscle relaxation focused on promoting mental relaxation by performing standardised relaxation exercises (including alternating muscle tension and relaxation of individual muscle groups with deep breathing). Participants were encouraged to continue this post-discharge. Moderate continuous training consisted of continuous cycling for at 60-70 revolutions per minute, with the goal of 65-70% peak heart rate. Participants also completed a 3-minute warm-up and cool-down. Participants received a reinforcement letter 6 weeks post-discharge, reminding them of the goals they set at the end of the inpatient stay, encouraging them to continue exercising, and practice their relaxation techniques. Both groups received 3-week multidisciplinary inpatient rehabilitation programme that included: physiotherapy for balance and walking ability (5 sessions per week, 30-60-minutes duration), strength training (3 sessions per week, 30-45-minutes duration), occupational therapy for activities of daily living (2-3 sessions per week, 30 minutes duration), neuropsychology for cognition (2 sessions per week, 30-minutes duration), social counselling, and physician consultations.
Duration of follow-up	6 months
Sources of funding	Not industry funded

Sample size	N=106 Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme: n=53 Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: n=53

ADL: activities of daily living; N/n: number of participants; OSA: occupational self-assessment; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- Post-intervention
- 4 months follow-up
- 6 months follow-up

Energy management education and HIIT plus multidisciplinary inpatient rehabilitation programme versus progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: Functional independence

Functional independence as measured by OSA - Polarity - Higher values are better

Outcome	Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme, Post-intervention vs Baseline, N = 52	Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme, 4 months follow-up vs Baseline, N = 49	Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme, 6 months follow-up vs Baseline, N = 48	Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme, Post-intervention vs Baseline, N = 52	Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme, 4 months follow-up vs Baseline, N = 49	Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme, 6 months follow-up vs Baseline, N = 48
OSA Mean (SD)	4.14 (7.6)	1.49 (7.74)	0.04 (7.92)	3.82 (7.25)	-0.48 (6.67)	0 (6.9)

N/n: number of participants; OSA: occupational self-assessment; SD: standard deviation

Energy management education and HIIT plus multidisciplinary inpatient rehabilitation programme versus progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme: Physical and mental health related quality of life

Physical and mental health related quality of life as measured by SF-36 physical component - Polarity - Higher values are better

Physical and mental health related quality of life as measured by SF-36 mental component - Polarity - Higher values are better

Outcome	Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme, Post-intervention vs Baseline, N = 52	Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme, 4 months follow-up vs Baseline, N = 50	Energy management education and high intensity interval training plus multidisciplinary inpatient rehabilitation programme, 6 months follow-up vs Baseline, N = 50	Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme, Post-intervention vs Baseline, N = 53	Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme, 4 months follow-up vs Baseline, N = 50	Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme, 6 months follow-up vs Baseline, N = 49
SF-36 physical component Mean (SD)	5.58 (7.73)	3.58 (7.93)	3.73 (7.82)	4.55 (7.15)	2.78 (7.88)	0.22 (7.5)
SF-36 mental component Mean (SD)	7.11 (8.7)	2.33 (9.12)	1.31 (8.98)	6.79 (8.84)	0.67 (9.18)	0.18 (9.16)

N/n: number of participants; SD: standard deviation; SF-36: 36-item short form survey

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Computer generated randomisation sequence; allocation concealed using*

Section	Question	Answer
		independent researcher; no suggestion of problems with randomisation process (statistical analysis not presented but baseline characteristics visually similar between groups).)
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Some concerns *(Participants, carers and people delivering intervention unblinded to group allocation; probably no deviations from intended intervention due to trial context. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Some concerns *(Participants with outcome data at 4 months: intervention 50/53 (94.3%), control 50/53 (94.3%); participants with outcome data at 6 months: intervention 50/53 (94.3%), control 49/53 (92.5%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome could depend on true value but unlikely as rates of and reasons for loss to follow up similar across groups.(Low risk) Participants with outcome data at post-intervention: intervention 52/53 (98.1%), control 53/53 (100%).)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors aware of group allocation as self-reported measures by unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and control group received an active intervention.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low *(Analysis as per protocol which was published online probably before outcome data was available; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	Some concerns
Overall bias and Directness	Overall Directness	Partially applicable *(Intervention is indirect due to inclusion of high intensity interval training component (outside of protocol).)*

Section	Question	Answer
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Quinn, 2014

Bibliographic Reference	Quinn, Lori; Debono, Katy; Dawes, Helen; Rosser, Anne Elizabeth; Nemeth, Andrea H; Rickards, Hugh; Tabrizi, Sarah J; Quarrell, Oliver; Trender-Gerhard, Iris; Kelson, Mark J; Townson, Julia; Busse, Monica; Task-specific training in Huntington disease: a randomized controlled feasibility trial.; Physical therapy; 2014; vol. 94 (no. 11); 1555-68

Study details

Country/ies where study was carried out	UK
Study type	Randomised controlled trial (RCT)
Study dates	July 2012 - July 2013
Inclusion criteria	- Genetically confirmed diagnosis of manifest Huntington's disease and self-reported or clinician-reported difficulties with walking or balance, - Total Functional Capacity scale score of 4 or above, - Enrolled in the European Huntington’s Disease Network Registry study, - Aged 18 years old or above, - Receiving stable medication for 4 weeks prior to study start, and able to keep stability throughout the trial, - Able to give informed consent.
Exclusion criteria	- History of other neurological disorders,

	- Unable to understand, communicate, and speak in English, - Orthopaedic comorbidity that limits walking, - Cardiac problems that affects participation in the intervention or the full battery of outcome assessment tests, - Receipt of physical therapy during the study period, - Participating in, or participating within the previous 2 months, another experimental study, - Uncontrolled psychiatric symptoms.
Patient characteristics	N=30 adults with Huntington's disease - Goal directed task-specific mobility training: n=15 - Usual care: n=15 Age in years [Mean (SD)] [1]: - Goal directed task-specific mobility training: 55.0 (10.0) - Usual care: 59.4 (10.0) Sex (M/F)[1]: - Goal directed task-specific mobility training: n=7/n=8 - Usual care: n=6/n=7 Time since diagnosis: Not reported Chronic neurological disorder category: Progressive neurological diseases

	[1]Only reported for 13 participants in control group.
Intervention(s)/control	**Intervention** Name: Goal directed task-specific mobility training Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Overall approaches. Delivery setting: In the home Number/frequency of sessions: 2 sessions per week (maximum 15 sessions), duration roughly 60-minutes. Duration: 8 weeks Practitioner(s): Physical therapist Content of programme was based on others effectively delivered in other neurological populations (no further details reported), and tailored to individuals' specific problems with walking, sit-to-stand transfers, standing ability, and home environments. Goals were jointly set between therapists and participants in the first 3 sessions, and attainment scored during the last session. Participants were encouraged to practice activities at least once per week between sessions. **Control** Name: Usual care Protocol description: Control (usual care) Delivery setting: Not reported Number/frequency of sessions: Not reported Duration: Not reported Practitioner(s): Not reported Participants received usual care (no further details reported) and asked to continue as normal between sessions, and not start any new medications or physical rehabilitation programmes.

Duration of follow-up	2 months.
Sources of funding	Not industry funded
Sample size	N=30 Goal directed task-specific mobility training: n=15 Usual care: n=15
Other information	GAS also reported but not presented separately for each group and therefore not extracted.

ADL: activities of daily living; GAS: goal attainment scale; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation; UHDRS: unified Huntington's disease rating scale

Outcomes

Study timepoints

- Baseline
- Post-intervention
- 4 months follow-up

Goal directed task-specific mobility training versus usual care: Physical and mental health related quality of life

Physical and mental health related quality of life as measured by EQ-5D VAS - Polarity - Higher values are better

Physical and mental health related quality of life as measured by HDQoL - Polarity - Higher values are better

Out-come	Goal directed task-specific mobility training, Post-intervention vs Base-line, N = 15	Goal directed task-specific mobility training, 4 months follow-up vs Base-line, N = 15	Usual care, Post-inter-vention vs Baseline, N = 13	Usual care, 4 months follow-up vs Baseline, N = 13
EQ-5D VAS	0.1 (18)	2.4 (18.32)	-1.9 (10.92)	-6.1 (9.59)

Out-come	Goal directed task-specific mobility training, Post-intervention vs Base-line, N = 15	Goal directed task-specific mobility training, 4 months follow-up vs Base-line, N = 15	Usual care, Post-inter-vention vs Baseline, N = 13	Usual care, 4 months follow-up vs Baseline, N = 13
Mean (SD)				
HDQoL	0.3 (15.98)	2.4 (15.67)	3.7 (11.14)	0 (12.84)
Mean (SD)				

EQ-5D VAS: EuroQol 5-dimensions visual analogue scale; HDQoL: Huntington's disease health-related quality of life; N/n: number of participants; SD: standard deviation

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns *(Computer generated randomisation sequence; no information on allocation concealment; no suggestion of problems with randomisation process (statistical analysis not presented but baseline characteristics visually similar between groups).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Some concerns *(Participants, carers and people delivering intervention unblinded to group allocation; no information on deviations from intended intervention due to trial context. Modified intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Some concerns *(Participants with outcome data at 16 weeks: intervention 15/15 (100%), control 13/15 (86.7%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome could depend on true value but unlikely as rates of and reasons for loss to follow up similar across groups.)*

Section	Question	Answer
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors aware of group allocation as self-reported measures by unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and researchers were blinded to group allocation.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	Some concerns
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Renfrew, 2019

Bibliographic Reference	Renfrew, Linda Miller; Paul, Lorna; McFadyen, Angus; Rafferty, Danny; Moseley, Owen; Lord, Anna C; Bowers, Roy; Mattison, Paul; The clinical- and cost-effectiveness of functional electrical stimulation and ankle-foot orthoses for foot drop in Multiple Sclerosis: a multicentre randomized trial.; Clinical rehabilitation; 2019; vol. 33 (no. 7); 1150-1162

Study details

Country/ies where study was carried out	UK
Study type	Randomised controlled trial (RCT)

Study dates	Not reported (entire study period April 2014 - March 2018)
Inclusion criteria	- Clinical diagnosis of multiple sclerosis and persistent foot-drop (defined as lasting at least 3 months) observed during a 5-minute walk test, - Showing no relapse or change in disability in previous 3 months, - Having 5° of passive dorsiflexion, - Able to tolerate functional electrical stimulation.
Exclusion criteria	- History of functional electrical stimulation or ankle-foot orthosis to treat their foot drop, - Moderate to severe cognitive impairment (defined as a Montreal Cognitive Assessment score of below 26), - Foot drop due to other conditions, - Comorbidities (including severe lower limb or trunk ataxia) significantly affecting their gait, marked proximal weakness, plantar flexor spasticity, or stance phase instability, - People with contraindications for functional electrical stimulation.
Patient characteristics	N=85 adults with multiple sclerosis - Functional electrical stimulation: n=42 - Ankle-foot orthosis: n=43 Age in years [Mean (SD)]: - Functional electrical stimulation: 50.4 (10.4) - Ankle-foot orthosis: 51.4 (11.2) Sex (M/F):

	- Functional electrical stimulation: n=8/n=33 - Ankle-foot orthosis: n=20/n=18 Time since diagnosis in years [Mean (SD)]: - Functional electrical stimulation 7.6 (8.6) - Ankle-foot orthosis 10.2 (10.3) Chronic neurological disorder category: Progressive neurological diseases
Intervention(s)/control	**Intervention** Name: Functional electrical stimulation Protocol intervention group: Interventions, equipment, and devices to support functioning and modify the environment – Wearable technology Delivery setting: Not applicable Number/frequency of sessions: Not applicable Duration: 12 months Practitioner(s): Physiotherapist experienced with functional electrical stimulation Odstock Dropped Foot Stimulator Pace was fitted, applying a wired heel switch and a 40 Hz stimulation frequency. Electrode position, pulse width, waveform and ramping parameters were adjusted for each participant for optimal muscle contraction, with the current amplitude averaging 40 mA (range 7-72 mA). Participants were instructed to gradually increase usage over initial 6 weeks. **Control** Name: Ankle-foot orthosis

	Protocol description: Control (usual care) Note: Study reports this as usual care in study clinic. Delivery setting: Not applicable Number/frequency of sessions: Not applicable Duration: 12 months Practitioner(s): Orthotist Custom made, solid ankle-foot orthosis, made with 5 mm homopolymer polypropylene and following guideline for ankle-foot orthoses after stroke. Trim lines were anterior to malleoli and ankle section was reinforced if needed. The tibia was angled forward by roughly 10° from vertical and heel wedged were used to finetune each orthosis. Participants were instructed to gradually increase usage over initial 6 weeks.
Duration of follow-up	12 months
Sources of funding	Not industry funded
Sample size	N=85 Functional electrical stimulation: n=42 Ankle-foot orthosis: n=43

ADL: activities of daily living; Hz: hertz; mA: milliamperes; mm: millimetres; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- 3 months follow-up
- 6 months follow-up
- 12 months follow-up

Functional electrical stimulation versus ankle-foot orthosis: Physical and mental health related quality of life

Physical and mental health related quality of life as measured by EQ-5D VAS - Polarity - Higher values are better

Outcome	Functional electrical stimulation, 3 months follow-up vs Baseline, N = 37	Functional electrical stimulation, 6 months follow-up vs Baseline, N = 37	Functional electrical stimulation, 12 months follow-up vs Baseline, N = 31	Ankle-foot orthosis, 3 months follow-up vs Baseline, N = 32	Ankle-foot orthosis, 6 months follow-up vs Baseline, N = 26	Ankle-foot orthosis, 12 months follow-up vs Baseline, N = 22
EQ-5D VAS Mean (SD)	2.3 (13.12)	1.3 (14.52)	4.1 (12.81)	0 (12.61)	-1.7 (12.77)	1.1 (12.72)

EQ-5D VAS: EuroQol 5-dimensions visual analogue scale; N/n: number of participants; SD: standard deviation

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Shuffled envelopes randomisation sequence; allocation concealed using appropriate envelopes; no suggestion of problems with randomisation process (baseline characteristics similar between groups apart from statistically more female participants in treatment group compared to control).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	High *(No information on blinding of participants, carers and people delivering intervention but nature of intervention and control hard to blind against; no deviations from intended intervention due to trial context as occupational therapists would have had to fit incorrect orthoses. Per protocol analysis performed; 6/85 (7.1%) did not receive intervention after randomisation and were not included in the analysis.)*

Section	Question	Answer
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	High *(Participants with outcome data at post-intervention: intervention 37/42 (88.1%%), control 32/43 (74.4%); participants with outcome data at 24 weeks: intervention 37/42 (88.1%%), control 26/43 (60.5%); participants with outcome data at 52 weeks: intervention 31/42 (73.8%%), control 22/43 (51.2%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome likely to depend on true value as rates of loss to follow up different across groups.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors probably aware of group allocation as self-reported measures by probably unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and control group received an active intervention.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Sturkenboom, 2014

Bibliographic Reference	Sturkenboom, Ingrid H W M; Graff, Maud J L; Hendriks, Jan C M; Veenhuizen, Yvonne; Munneke, Marten; Bloem, Bastiaan R; Nijhuis-van der Sanden, Maria W; Efficacy of occupational therapy for patients with Parkinson's disease: a randomised controlled trial.; The Lancet. Neurology; 2014; vol. 13 (no. 6); 557-66

Study details

Country/ies where study was carried out	The Netherlands
Study type	Randomised controlled trial (RCT)
Study dates	April 2011 - November 2012
Inclusion criteria	- Diagnosed Parkinson's disease (as defined by UK Brain Bank criteria) and difficulties with meaningful activities of daily living (defined as activities they needed or wanted to do), - Living at home.
Exclusion criteria	- Atypical parkinsonism, - Receiving occupational therapy with the previous 3 months, - Predominant disabling comorbidity, - Severe cognitive impairment (defined as a Montreal Cognitive Assessment score of below 24), - Unable to understand Dutch.
Patient characteristics	N=191 adults with Parkinson’s disease - Home-based occupational therapy: n=124 - Usual care (with no occupational therapy): n=67 Age in years [Median (IQR)]: - Home-based occupational therapy: 71.0 (63.3-76.0) - Usual care with no occupational therapy: 70.0 (63.0-75.0)

Sex (M/F) [1]:

- Home-based occupational therapy: n=78/n=46

- Usual care with no occupational therapy: n=41/n=26

Time since diagnosis in years (reported as disease duration) [Median (IQR)]:

- Home-based occupational therapy: 6.0 (4.0-10.0)

- Usual care with no occupational therapy: 6.0 (3.0-11.0)

Chronic neurological disorder category: Progressive neurological diseases

Protocol population did not include carers. However, carers were included in the study and carer quality of life is a protocol outcome so carer characteristics are presented here for context.

N=180 carers of people with Parkinson's disease.

- Home-based occupational therapy: n=117
- Usual care (with no occupational therapy): n=63

Age of patient group [Median (IQR)]: As reported above

Sex of patient group (M/F): As reported above

	[1]Only reported for 123 participants in intervention group and 66 in control.
Intervention(s)/control	**Intervention** Name: Home-based occupational therapy Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Interventions for personal activities of daily living Delivery setting: In the home Number/frequency of sessions: Frequency and number of sessions varied but 16-hours maximum, duration 1-hour average Duration: 10 weeks Practitioner(s): Occupational therapists Therapy content was based on national guideline for occupational therapy. Intervention strategies were individualised to participants' prioritised activities, to their coping style, their capacity for change, and their environmental and social contexts. As such, interventions varied but included advice and strategy training for activities of daily living, as well as adaptations of tasks, routines, and environments. Carer needs were also assessed, and their needs incorporated into programmes if needed. Note: Participants and caregivers were allowed to access other medical, psychosocial, or allied healthcare services outside of the trial. **Control** Name: Usual care (with no occupational therapy) Protocol description: Control (usual care) Delivery setting: Not reported Number/frequency of sessions: Not reported Duration: 10 weeks Practitioner(s): Not reported

	Participants continued to receive their usual care (no further details reported) but did not receive occupational therapy during trial. Note: All participants and caregivers were allowed to access other medical, psychosocial, or allied healthcare services outside of the trial.
Duration of follow-up	6 months
Sources of funding	Not industry funded
Sample size	N=191 Home-based occupational therapy: n=124 Usual care with no occupational therapy: n=67

ADL: activities of daily living; IQR: interquartile range; N/n: number of participants; RCT: randomised controlled trial

Outcomes

Study timepoints

- Baseline
- 3 months follow-up
- 6 months follow-up

Home-based occupational therapy versus usual care (with no occupational therapy): Functional independence

Functional independence as measured by COPM performance - Polarity - Higher values are better

Functional independence as measured by COPM satisfaction - Polarity - Higher values are better

Outcome	Home-based occupational therapy, Baseline, N = 124	Home-based occupational therapy, 3 months follow-up, N = 122	Home-based occupational therapy, 6 months follow-up, N = 120	Usual care (with no occupational therapy), Baseline, N = 67	Usual care (with no occupational therapy), 3 months follow-up, N = 63	Usual care (with no occupational therapy), 6 months follow-up, N = 61
COPM performance Median (IQR)	4.3 (3.5 to 5)	5.8 (5 to 6.4)	5.7 (4.6 to 6.6)	4.4 (3.8 to 5)	4.6 (4.6 to 6.6)	4.7 (4.8 to 6.5)
COPM satisfaction Median (IQR)	4.2 (3.2 to 4.8)	5.6 (3.8 to 5.5)	5.6 (4 to 5.5)	4.3 (3.4 to 4.8)	4.6 (3.8 to 5.8)	4.8 (4 to 5.5)

COPM: Canadian occupational performance measure; IQR: interquartile range; N/n: number of participants

Home-based occupational therapy versus usual care (with no occupational therapy): Physical and mental health related quality of life

Physical and mental health related quality of life as measured by PDQ-39 - Polarity - Lower values are better

Physical and mental health related quality of life as measured by EQ-5D - Polarity - Higher values are better

Physical and mental health related quality of life as measured by VAS - Polarity - Higher values are better

Outcome	Home-based occupational therapy, Baseline, N = 122	Home-based occupational therapy, 3 months follow-up, N = 118	Home-based occupational therapy, 6 months follow-up, N = 119	Usual care (with no occupational therapy), Baseline, N = 65	Usual care (with no occupational therapy), 3 months follow-up, N = 60	Usual care (with no occupational therapy), 6 months follow-up, N = 60
PDQ-39	35.5 (26.3 to 44.9)	34.5 (23.3 to 42.1)	36.3 (26.1 to 45.3)	34.6 (27.6 to 42.5)	33.5 (23.2 to 45)	35.6 (23.9 to 42.9)

Outcome	Home-based occupational therapy, Baseline, N = 122	Home-based occupational therapy, 3 months follow-up, N = 118	Home-based occupational therapy, 6 months follow-up, N = 119	Usual care (with no occupational therapy), Baseline, N = 65	Usual care (with no occupational therapy), 3 months follow-up, N = 60	Usual care (with no occupational therapy), 6 months follow-up, N = 60
Median (IQR)						

IQR: interquartile range; N/n: number of participants; PDQ-39: Parkinson's disease questionnaire

Outcome	Home-based occupational therapy, Baseline, N = 123	Home-based occupational therapy, 3 months follow-up, N = 119	Home-based occupational therapy, 6 months follow-up, N = 118	Usual care (with no occupational therapy), Baseline, N = 66	Usual care (with no occupational therapy), 3 months follow-up, N = 62	Usual care (with no occupational therapy), 6 months follow-up, N = 62
EQ-5D Median (IQR)	0.69 (0.65 to 0.78)	0.72 (0.57 to 0.81)	0.69 (0.57 to 0.81)	0.73 (0.57 to 0.81)	0.73 (0.57 to 0.81)	0.69 (0.57 to 0.78)

EQ-5D: EuroQol 5-dimensions; IQR: interquartile range; N/n: number of participants

Outcome	Home-based occupational therapy, Baseline, N = 124	Home-based occupational therapy, 3 months follow-up, N = 121	Home-based occupational therapy, 6 months follow-up, N = 120	Usual care (with no occupational therapy), Baseline, N = 66	Usual care (with no occupational therapy), 3 months follow-up, N = 62	Usual care (with no occupational therapy), 6 months follow-up, N = 61
VAS Median (IQR)	7 (6 to 7.5)	7 (6 to 7.5)	6 (5.1 to 7)	7 (5.4 to 7)	7 (5 to 7)	7 (5.3 to 7)

IQR: interquartile range; N/n: number of participants; VAS: visual analogue scale

Home-based occupational therapy versus usual care (with no occupational therapy): Carer quality of life

Carer quality of life as measured by ZBI - Polarity - Lower values are better

Carer quality of life as measured by EQ-5D - Polarity - Higher values are better

Carer quality of life as measured by VAS - Polarity - Higher values are better

Outcome	Home-based occupational therapy, Baseline, N = 117	Home-based occupational therapy, 3 months follow-up, N = 114	Home-based occupational therapy, 6 months follow-up, N = 112	Usual care (with no occupational therapy), Baseline, N = 62	Usual care (with no occupational therapy), 3 months follow-up, N = 59	Usual care (with no occupational therapy), 6 months follow-up, N = 53
ZBI Median (IQR)	18 (9.5 to 27)	18 (10.8 to 27.1)	19 (10.3 to 29.8)	18.5 (8.8 to 28)	22 (13 to 28)	24 (14.5 to 30.5)

IQR: interquartile range; N/n: number of participants; ZBI: Zarit burden index

Outcome	Home-based occupational therapy, Baseline, N = 115	Home-based occupational therapy, 3 months follow-up, N = 112	Home-based occupational therapy, 6 months follow-up, N = 104	Usual care (with no occupational therapy), Baseline, N = 63	Usual care (with no occupational therapy), 3 months follow-up, N = 58	Usual care (with no occupational therapy), 6 months follow-up, N = 59
EQ-5D Median (IQR)	0.84 (0.78 to 1)	0.84 (0.78 to 1)	0.84 (0.78 to 1)	0.89 (0.78 to 1)	0.84 (0.78 to 1)	0.81 (0.78 to 1)

EQ-5D: EuroQol 5-dimensions; IQR: interquartile range; N/n: number of participants

Outcome	Home-based occupational therapy, Baseline, N = 115	Home-based occupational therapy, 3 months follow-up, N = 113	Home-based occupational therapy, 6 months follow-up, N = 112	Usual care (with no occupational therapy), Baseline, N = 63	Usual care (with no occupational therapy), 3 months follow-up, N = 59	Usual care (with no occupational therapy), 6 months follow-up, N = 53
VAS	7.5 (7 to 8)	7.5 (7 to 8)	7 (7 to 8)	7.5 (7 to 8)	7.5 (7 to 8)	7 (6.3 to 8)

Outcome	Home-based occupational therapy, Baseline, N = 115	Home-based occupational therapy, 3 months follow-up, N = 113	Home-based occupational therapy, 6 months follow-up, N = 112	Usual care (with no occupational therapy), Baseline, N = 63	Usual care (with no occupational therapy), 3 months follow-up, N = 59	Usual care (with no occupational therapy), 6 months follow-up, N = 53
Median (IQR)						

IQR: interquartile range; N/n: number of participants; VAS: visual analogue scale

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns *(Computer generated randomisation sequence; no information on allocation concealment; no suggestion of problems with randomisation process (statistical analysis not presented but study states baseline characteristics similar between groups).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	High *(Participants, carers and people delivering intervention unblinded to group allocation; some deviations from intended intervention due to trial context as participants in control group not restricted from accessing other occupational therapy services; deviations likely to affect outcome and unbalanced between groups. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	High *(Participants with outcome data at post-intervention: intervention 121/124 (97.6%), control 57/67 (85.1%); participants with outcome data at 3 months: intervention 119/124 (96.0%), control 53/677 (79.1%); participants with outcome data at 6 months: intervention 118/124 (95.2%), control 51/67 (91.0%); sensitivity analysis or correction for bias analysis not presented; missingness of outcome likely to depend on true value as rates of loss to follow up different across groups.)*

Section	Question	Answer
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors aware of group allocation as self-reported measures by unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and researchers were blinded to group allocation.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(Analysis as per protocol which was probably not published online before outcome data was available (published February 2013 and recruitment started in April 2011); all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Veenhuizen, 2019

Bibliographic Reference	Veenhuizen, Yvonne; Cup, Edith H C; Jonker, Marianne A; Voet, Nicoline B M; van Keulen, Bianca J; Maas, Daphne M; Heeren, Anita; Groothuis, Jan T; van Engelen, Baziel G M; Geurts, Alexander C H; Self-management program improves participation in patients with neuromuscular disease: A randomized controlled trial.; Neurology; 2019; vol. 93 (no. 18); e1720-e1731

Study details

Country/ies where study was carried out	The Netherlands
Study type	Randomised controlled trial (RCT)

Study dates	July 2014 - September 2015
Inclusion criteria	- Diagnosis of neuromuscular disease (judged by neurologist using established criteria) and experiencing chronic fatigue that impacts their daily living and social participation (as judged by occupational therapist), • Study included various types of neuromuscular diseases but recruitment focused on facioscapulohumeral dystrophy, mitochondrial myopathies, and inclusion body myositis. - Aged 18 years old or above.
Exclusion criteria	- Severe cardiorespiratory problems contraindicating participation in aerobic exercise training, - Pregnant, - Limited life expectancy (defined as less than 5 years) due to comorbidities, - History of participating in Energetic (or similar) programme, - Comorbidities preventing adherence to intervention (including depressive symptoms, psychiatric symptoms, cognitive issues, and addictions).
Patient characteristics	N=53 adults with neuromuscular disease - Energetic self-management programme: n=29 - Usual care: n=24 Age in years [Median (IQR)]: - Energetic self-management programme: 52.0 (37.0-63.0) - Usual care: 50.0 (41.0-60.0) Sex (M/F):

	- Energetic self-management programme: n=8/n=21 - Usual care: n=9/n=15 Time since diagnosis in years [Median (IQR)]: - Energetic self-management programme: 7 (0-41) - Usual care: 2 (0-39) Chronic neurological disorder category: Progressive neurological diseases
Intervention(s)/control	**Intervention** Name: Energetic self-management programme Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Overall approaches Delivery setting: In the home and outpatient rehabilitation clinic Number/frequency of sessions: 1x energy conservation management session per week (totalling 8 sessions), duration 90-minutes, 3x aerobic exercise training sessions per week (totalling 48 sessions), duration 30 minutes, 3 x exercise education sessions in first 3 weeks (totalling 3 sessions), duration 60-minutes, 10x implementation and relapse prevention sessions (totalling 10 sessions), duration not reported. A 2-hour booster session was held 2 months after intervention completion. Note: For first 9 weeks, 2 aerobic exercise sessions were performed at the clinic and 1 at home. For the remaining 7 weeks, 1 aerobic exercise session was performed at the clinic and 2 at home. Duration: 16 weeks Practitioner(s): Physical therapist, occupational therapist, sports trainer Programme was delivered in groups of 4-8 participants but was individualised as much as possible. Consisted of 4 modules.

	Energy conservation management sessions included education, conversation, individual goal setting, practicing activities, and completing homework to generalise strategies to the context of daily living. Aerobic exercise training sessions were individually tailored and aimed at an intensity of 50-70% of peak heart rate. Exercises varied depending on personal preference, abilities and practical considerations, but included treadmill walking, indoor cycling, indoor rowing, and using a cross-trainer. Exercise education focused on general physical and aerobic exercise training principles in the context of neuromuscular disorders. Implementation and relapse prevention sessions allowed practitioners time to support and empower participants to apply aerobic exercise and energy conservation management strategies to their daily life, including helping them to find a way to exercise at home (for example, exploring different exercise modalities). Carers were invited to 2 of these sessions. **Control** Name: Usual care Protocol description: Control (usual care) Delivery setting: Not reported Number/frequency of sessions: Not reported Duration: 16 weeks Practitioner(s): Not reported Participants continued to receive whatever their usual care was (for example, physical therapy, other forms of multidisciplinary rehabilitation care, or no intervention at all).
Duration of follow-up	11 months
Sources of funding	Not industry funded
Sample size	N=53 Energetic self-management programme: n=29

	Usual care: n=24

ADL: activities of daily living; COPM: Canadian occupational performance measure; IQR: interquartile range; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- Post-intervention
- 3 months follow-up
- 11 months follow-up

Energetic self-management programme versus usual care: functional independence

Functional independence as measured by COPM performance - Polarity - Higher values are better

Functional independence as measured by COPM satisfaction - Polarity - Higher values are better

Outcome	Energetic self-management programme, Post-intervention vs Baseline, N = 27	Energetic self-management programme, 3 months follow-up vs Baseline, N = 27	Energetic self-management programme, 11 months follow-up vs Baseline, N = 27	Usual care, Post-intervention vs Baseline, N = 24	Usual care, 3 months follow-up vs Baseline, N = 23	Usual care, 11 months follow-up vs Baseline, N = 22
COPM performance Mean (SD)	2.7 (0.96)	2.1 (1.34)	1.9 (1.26)	1 (0.94)	1.4 (1.28)	1.1 (1.2)

Outcome	Energetic self-management programme, Post-intervention vs Baseline, N = 27	Energetic self-management programme, 3 months follow-up vs Baseline, N = 27	Energetic self-management programme, 11 months follow-up vs Baseline, N = 27	Usual care, Post-intervention vs Baseline, N = 24	Usual care, 3 months follow-up vs Baseline, N = 23	Usual care, 11 months follow-up vs Baseline, N = 22
COPM satisfaction Mean (SD)	3 (1.08)	2.8 (1.19)	2.3 (1.03)	1 (1.15)	1.6 (1.26)	1.7 (1.1)

COPM: Canadian occupational performance measure; N/n: number of participants; SD: standard deviation

Energetic self-management programme versus usual care: carer quality of life

Carer quality of life as measured by ZBI - Polarity - Lower values are better

Outcome	Energetic self-management programme, Post-intervention vs Baseline, N = 20	Energetic self-management programme, 3 months follow-up vs Baseline, N = 19	Energetic self-management programme, 11 months follow-up vs Baseline, N = 17	Usual care, Post-intervention vs Baseline, N = 17	Usual care, 3 months follow-up vs Baseline, N = 16	Usual care, 11 months follow-up vs Baseline, N = 13
ZBI Mean (SD)	1.3 (6.2)	1.3 (6.82)	4.4 (7.99)	0.8 (6.24)	2.5 (6.95)	1.4 (6.73)

N/n: number of participants; SD: standard deviation; ZBI: Zarit burden index

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(Computer generated randomisation sequence; allocation concealed using independent researcher; no suggestion of problems with randomisation process (statistical*

Section	Question	Answer
		analysis not presented but study states baseline characteristics similar between groups).)
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Some concerns *(Participants, carers and people delivering intervention unblinded to group allocation; no information on deviations from intended intervention due to trial context. Intention-to-treat analysis performed.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Some concerns *(Participants with outcome data at 3 months: intervention 27/29 (93.1%), control 23/24 (95.8%); participants with outcome data at 7 months: intervention 27/29 (93.1%), control 22/24 (91.7%); sensitivity analysis showed slightly lower functional independence score when compared to main analysis; missingness of outcome could depend on true value but unlikely as rates of and reasons for loss to follow up similar across groups.(Low risk) Participants with outcome data at post-intervention: intervention 27/29 (93.1%), control 24/24 (100%).)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors aware of group allocation as self-reported measures by unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and researchers were blinded to group allocation.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low *(Analysis as per protocol which was published online probably before outcome data was available; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	Some concerns
Overall bias and Directness	Overall Directness	Partially applicable *(Intervention is indirect due to inclusion of aerobic exercise and exercise education components (outside of protocol).)*

Section	Question	Answer
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Volpe, 2017

Bibliographic Reference	Volpe, Daniele; Pelosin, Elisa; Bakdounes, Leila; Masiero, Stefano; Bertagnoni, Giannettore; Sorbera, Chiara; Giantin, Maria Giulia; Effects of a sensory-motor orthotic on postural instability rehabilitation in Parkinson's disease: a pilot study.; Journal of clinical movement disorders; 2017; vol. 4; 11

Study details

Country/ies where study was carried out	Italy
Study type	Randomised controlled trial (RCT)
Study dates	Not reported
Inclusion criteria	- Diagnosis of idiopathic Parkinson's disease (as defined using UK Parkinson's Disease Society Brain Bank criteria), - Stage 3 of Heohn and Yahr scale, - Mini-Mental State Examination score above 24, - Able to walk independently without aids and attend physiotherapy venue, - Without significant cardiac, pulmonary, or orthopaedic comorbidities that might affect their gait or balance.
Exclusion criteria	- Major depression (as defined by DSM V criteria), - Deep Brain Stimulation implants, - Medically unstable or had medically induced dyskinesias,

	- History of other disorders that might affect stability (for example, poor visual acuity, vestibular dysfunction, neuropathies, sensory ataxias).
Patient characteristics	N=20 adults with Parkinson's disease - Sensory-motor orthosis plus physiotherapy balance programme: n=10 - Physiotherapy balance programme: n=10 Age in years [Mean (SD)]: - Sensory-motor orthosis plus physiotherapy balance programme: 69.18 (7.61) - Physiotherapy balance programme: 63.37 (6.89) Sex (M/F): - Sensory-motor orthosis plus physiotherapy balance programme: n=7/n=3 - Physiotherapy balance programme: n=5/n=3 Time since diagnosis in years (reported as disease duration) [Mean (SD)]: - Sensory-motor orthosis plus physiotherapy balance programme: 7.82 (4.00) - Physiotherapy balance programme: 8.12 (2.90) Chronic neurological disorder category: Progressive neurological diseases
Intervention(s)/control	**Intervention** Name: Sensory-motor orthosis plus physiotherapy balance programme

	Protocol intervention group: Interventions to develop skills for adaptive functioning or functional task training – Interventions for functional mobility Delivery setting: Not applicable Number/frequency of sessions: Not applicable Duration: 2 weeks Practitioner(s): Orthotist Participants were instructed to wear sensory-motor orthosis every day during the trial period, except during the balance training sessions. Sensory-motor orthosis combines biomechanical and sensory-motor input on plantar surface of the foot by modulating activation of specific muscles. It is composed of 4 spots to stimulate muscle tendons to subsequently initiate muscle contraction: medial spot actives medial muscular kinetic chain (tibia, adductor and paraspinal muscles); lateral spot activates lateral muscular kinetic chain (peroneal, abductor, iliotibial, paraspinal muscles muscles); and metatarsal and under digital spots activates the extensor muscular kinetic chain (finger flexors, triceps, femoris biceps, gluteus and paraspinal muscles). Participants also received physiotherapy balance programme as per comparison group. **Control** Name: Physiotherapy balance programme Protocol description: Control (standard care) Delivery setting: Not reported Number/frequency of sessions: 5x sessions per week (totalling 10 sessions), duration 50-minutes Duration: 2 weeks Practitioner(s): Physiotherapist The physiotherapy programme was designed in accordance with national physiotherapy guidelines, including 30-minutes of perturbation-based balance exercises designed to put participants at the limit of their stability. In these exercises, individuals were asked to activate appropriate postural responses to oppose external perturbations. Sessions also included a 10-minute warm up and 10-minute cool-down portion.

Duration of follow-up	1 month
Sources of funding	No funding received
Sample size	N=20 Sensory-motor orthosis plus physiotherapy balance programme: n=10 Physiotherapy balance programme: n=10

ADL: activities of daily living; N/n: number of participants; RCT: randomised controlled trial; SD: standard deviation

Outcomes

Study timepoints

- Baseline
- Post-intervention
- 1 month follow-up

Sensory-motor foot orthosis plus physiotherapy balance programme versus physiotherapy balance programme: Physical and mental health related quality of life

Physical and mental health related quality of life as measured by PDQ-39 - Polarity - Lower values are better

Outcome	Sensory-motor orthosis plus physiotherapy balance programme, Post-intervention vs Baseline, N = 8	Sensory-motor orthosis plus physiotherapy balance programme, 1 month follow-up vs Baseline, N = 8	Physiotherapy balance programme, Post-intervention vs Baseline, N = 10	Physiotherapy balance programme, 1 month follow-up vs Baseline, N = 10
PDQ-39 Mean (SD)	-3.34 (16.88)	-5.6 (18.3)	-9.5 (13.61)	-7.75 (12.87)

N/n: number of participants; PDQ-39: Parkinson's disease questionnaire; RCT: randomised controlled trial; SD: standard deviation

Critical appraisal – Cochrane RoB 2

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low *(No information on randomisation sequence; allocation concealed using independent researcher; no suggestion of problems with randomisation process (baseline characteristics similar between groups).)*
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	High *(No information on blinding of participants but nature of intervention and control hard to blind against; study coordination responsible for orthoses was not blinded (although physiotherapists were); no information on deviations from intended intervention due to trial context. Naïve per-protocol analysis performed; 2/20 (10%) did not receive intervention after randomisation and were not included in the analysis.)*
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low *(18/20 (90%) participants with outcome data at post-intervention and 1 month follow-up; sensitivity analysis or correction for bias analysis not presented; missingness of outcome not dependent on true value as reasons given were unrelated to study.)*
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns *(Appropriate outcome measurement method, unlikely to differ between groups; outcome assessors probably aware of group allocation as self-reported measures by probably unblinded participants; outcome measurement could be influenced by knowledge of group allocation as subjective measurements but unlikely as measured using standardised, validated measurement tool, and researchers were blinded to group allocation.)*
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Some concerns *(No information on pre-specified analysis plan; all scales, time points and analysis results reported.)*
Overall bias and Directness	Risk of bias judgement	High

Section	Question	Answer
Overall bias and Directness	Overall Directness	Directly applicable
Overall bias and Directness	Risk of bias variation across outcomes	None identified

Appendix E Forest plots

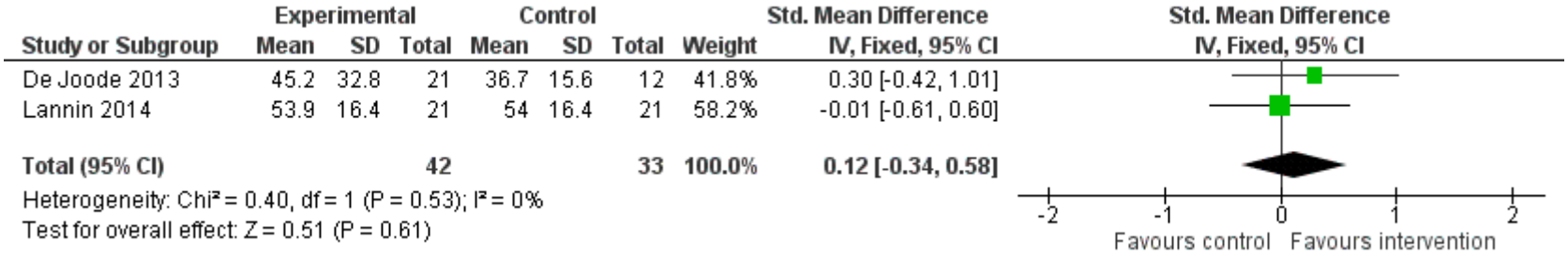
Forest plots for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

This section includes forest plots only for outcomes that are meta-analysed. Outcomes from single studies are not presented here; the quality assessment for such outcomes is provided in the GRADE profiles in appendix F.

Interventions to develop skills for adaptive functioning or functional task training: Community living skills

Community living skills versus control in adults with acquired brain injury

Figure 2: Personal goal attainment as measured by a validated scale; change scores at post-intervention



CI: confidence interval; IV inverse variance; SD: standard deviation

Appendix F GRADE tables

GRADE tables for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Table 7: Evidence profile for comparison between two different overall approaches in adults with acquired brain injury

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Error-based learning	Error-less learning	Relative (95% CI)	Absolute		
Functional independence as measured by SPRS at post-intervention (Better indicated by higher values)												
1 (Ownsworth 2017)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	25	25	-	F score = 0.013[3] p value > 0.05[4]	VERY LOW	CRITICAL
Functional independence as measured by SPRS at 6 months follow-up (Better indicated by higher values)												
1 (Ownsworth 2017)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	21	20	-	F score = 0.574[5] p value > 0.05[4]	VERY LOW	CRITICAL

CI: confidence interval; SPRS: Sydney psychosocial reintegration scale
1 Serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 Very serious imprecision due to sample size <200
3 Adjusted for age, global neuropsychological function score, and baseline functioning
4 No statistically significant difference between groups, according to author analysis
5 Adjusted for baseline values and concurrent occupational therapy

Table 8: Evidence profile for comparison between overall approaches and control in adults with progressive neurological diseases

Quality assessment	No of patients	Effect	Quality	Importance

No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Energetic self-management programme	Usual care	Relative (95% CI)	Absolute		
Functional independence as measured by COPM performance change scores at post-intervention (Better indicated by higher values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	27	24	-	MD 1.7 higher (1.18 to 2.22 higher)	LOW	CRITICAL
Functional independence as measured by COPM satisfaction change scores at post-intervention (Better indicated by higher values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	27	24	-	MD 2 higher (1.39 to 2.61 higher)	LOW	CRITICAL
Functional independence as measured by COPM performance change scores at 3 months follow-up (Better indicated by higher values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	27	23	-	MD 0.7 higher (0.03 lower to 1.43 higher)	VERY LOW	CRITICAL
Functional independence as measured by COPM satisfaction change scores at 3 months follow-up (Better indicated by higher values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	27	23	-	MD 1.2 higher (0.52 to 1.88 higher)	VERY LOW	CRITICAL
Functional independence as measured by COPM performance change scores at 11 months follow-up (Better indicated by higher values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	27	22	-	MD 0.8 higher (0.11 to 1.49 higher)	VERY LOW	CRITICAL
Functional independence as measured by COPM satisfaction change scores at 11 months follow-up (Better indicated by higher values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	27	22	-	MD 0.6 higher (0 to 1.2 higher)	VERY LOW	CRITICAL
Carer quality of life as measured by ZBI change scores at post-intervention (Better indicated by lower values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	20	17	-	MD 0.5 higher (3.52 lower to 4.52 higher)	LOW	IMPORTANT

Carer quality of life as measured by ZBI change scores at 3 months follow-up (Better indicated by lower values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	19	16	-	MD 1.2 lower (5.78 lower to 3.38 higher)	VERY LOW	IMPORTANT
Carer quality of life as measured by ZBI change scores at 11 months follow-up (Better indicated by lower values)												
1 (Veenhuizen 2019)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	17	13	-	MD 3 higher (2.27 lower to 8.27 higher)	VERY LOW	IMPORTANT

CI: confidence interval; COPM: Canadian occupational performance measure; MD: mean difference; ZBI: Zarit burden index
1 Serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 Intervention is indirect due to inclusion of aerobic exercise and exercise education components (outside of protocol)
3 95% CI crosses 1 MID (0.5x control group SD, for COPM performance +/- 0.6; for COPM satisfaction +/- 0.75; for ZBI +/- 4.65)

Table 9: Evidence profile for comparison between overall approaches and control in adults with multiple sclerosis

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Energy management education and HIIT plus multidisciplinary inpatient rehabilitation programme**	**Progressive muscle relaxation and moderate continuous training plus multidisciplinary inpatient rehabilitation programme**	**Relative (95% CI)**	**Absolute**		
Functional independence as measured by OSA change scores at post-intervention (Better indicated by higher values)												
1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	52	52	-	MD 0.32 higher (2.53 lower to 3.17 higher)	LOW	CRITICAL
Functional independence as measured OSA change scores at 4 months follow-up (Better indicated by higher values)												
1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	serious[3]	none	49	49	-	MD 1.97 higher (0.89 lower to 4.83 higher)	VERY LOW	CRITICAL
Functional independence as measured by OSA change scores at 6 months follow-up (Better indicated by higher values)												

1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	48	48	-	MD 0.04 higher (2.93 lower to 3.01 higher)	LOW	CRITICAL
Physical and mental health related quality of life as measured by SF-36 physical component change scores at post-intervention (Better indicated by higher values)												
1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	52	53	-	MD 1.03 higher (1.82 lower to 3.88 higher)	LOW	CRITICAL
Physical and mental health related quality of life as measured by SF-36 mental component change scores at post-intervention (Better indicated by higher values)												
1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	52	53	-	MD 0.32 higher (3.04 lower to 3.68 higher)	LOW	CRITICAL
Physical and mental health related quality of life as measured by SF-36 physical component change scores at 4 months (Better indicated by higher values)												
1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	50	50	-	MD 0.8 higher (2.3 lower to 3.9 higher)	LOW	CRITICAL
Physical and mental health related quality of life as measured by SF-36 mental component change scores at 4 months (Better indicated by higher values)												
1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	50	50	-	MD 1.66 higher (1.93 lower to 5.25 higher)	LOW	CRITICAL
Physical and mental health related quality of life as measured by SF-36 physical component change scores at 6 months (Better indicated by higher values)												
1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	50	49	-	MD 3.51 higher (0.49 to 6.53 higher)	LOW	CRITICAL

Physical and mental health related quality of life as measured by SF-36 mental component change scores at 6 months (Better indicated by higher values)												
1 (Patt 2023)	randomised trials	serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	50	49	-	MD 1.13 higher (2.44 lower to 4.7 higher)	LOW	CRITICAL

CI: confidence interval; HIIT: high intensity interval training; MD: mean difference; OSA: occupational self-assessment; SF-36: 36-item short form survey
1 Serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 Intervention is indirect due to inclusion of high intensity interval training component (outside of protocol)
3 95% CI crosses 1 MID (0.5x control group SD, for OSA +/- 4.375)

Table 10: Evidence profile for comparison between overall approaches and placebo in adults with multiple sclerosis

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Self-management occupational therapy programme**	**Relaxation therapy**	**Relative (95% CI)**	**Absolute**		
Functional independence as measured by COPM performance change scores at post-intervention (Better indicated by higher values)												
1 (Kos 2016)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	14	11	-	MD 1.3 higher (0.22 to 2.38 higher)	VERY LOW	CRITICAL
Functional independence as measured by COPM satisfaction change scores at post-intervention (Better indicated by higher values)												
1 (Kos 2016)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	14	11	-	MD 0.6 higher (0.56 lower to 1.76 higher)	VERY LOW	CRITICAL
Functional independence as measured by COPM performance change scores at 3 months follow-up (Better indicated by higher values)												
1 (Kos 2016)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	14	11	-	MD 1.5 higher (0.4 to 2.6 higher)	VERY LOW	CRITICAL
Functional independence as measured by COPM satisfaction change scores at 3 months follow-up (Better indicated by higher values)												

1 (Kos 2016)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	seri-ous[2]	none	14	11	-	MD 0.9 higher (0.2 lower to 2 higher)	VERY LOW	CRITICAL

CI: confidence interval; COPM: Canadian occupational performance measure; MD: mean difference
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 95% CI crosses 1 MID (0.5x control group SD, for COPM performance +/- 1.05; for COPM satisfaction +/- 1.15)

Table 11: Evidence profile for comparison between overall approaches and control in adults with Huntington's disease

Quality assessment							No of patients		Effect		Quality	Im-portance
No of stud-ies	**Design**	**Risk of bias**	**Inconsistency**	**Indirect-ness**	**Imprecision**	**Other consid-erations**	**Goal directed task-specific mobility train-ing**	**Usual care**	**Relative (95% CI)**	**Absolute**		
Physical and mental health related quality of life as measured by HDQoL change scores at post-intervention (Better indicated by higher values)												
1 (Quinn 2014)	randomised trials	seri-ous[1]	no serious incon-sistency	no serious indirectness	serious[2]	none	15	13	-	MD 3.4 lower (13.5 lower to 6.7 higher)	LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D VAS change scores at post-intervention (Better indicated by higher values)												
1 (Quinn 2014)	randomised trials	seri-ous[1]	no serious incon-sistency	no serious indirectness	very serious[3]	none	15	13	-	MD 2 higher (8.87 lower to 12.87 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by HDQoL change scores at 4 months follow-up (Better indicated by higher values)												
1 (Quinn 2014)	randomised trials	seri-ous[1]	no serious incon-sistency	no serious indirectness	serious[2]	none	15	13	-	MD 2.4 higher (8.16 lower to 12.96 higher)	LOW	CRITICAL

Physical and mental health related quality of life as measured by EQ-5D VAS change scores at 4 months follow-up (Better indicated by higher values)												
1 (Quinn 2014)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	15	13	-	MD 8.5 higher (2.14 lower to 19.14 higher)	LOW	CRITICAL

CI: confidence interval; EQ-5D VAS: EuroQol 5-dimensions visual analogue scale; HDQoL: Huntington's disease health-related quality of life; MD: mean difference
1 Serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 95% CI crosses 1 MID (0.5x control group SD, for HDQoL +/-8.3; for EQ-5D VAS +/- 6.3)
3 95% CI crosses 2 MIDs (0.5x control group SD, for EQ-5D VAS +/- 6.3)

Table 12: Evidence profile for comparison between interventions for personal activities of daily living and control in adults with Parkinson's disease

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Tailored physiotherapy and occupational therapy**	**Waitlist control**	**Relative (95% CI)**	**Absolute**		
Functional independence as measured by NEADL change scores at 3 months follow-up (Better indicated by higher values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	294	304	-	MD 0.5 lower (1.72 lower to 0.72 higher)	VERY LOW	CRITICAL
Functional independence as measured by NEADL change scores at 9 months follow-up (Better indicated by higher values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	289	303	-	MD 0.6 lower (1.93 lower to 0.73 higher)	VERY LOW	CRITICAL
Functional independence as measured by NEADL change scores at 15 months follow-up (Better indicated by higher values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	268	283	-	MD 1.2 higher (0.34 lower to 2.74 higher)	VERY LOW	CRITICAL

Physical and mental health related quality of life as measured by PDQ-39 summary index change scores at 3 months (Better indicated by lower values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	349	351	-	MD 0 higher (1.51 lower to 1.51 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D quotient change scores at 3 months (Better indicated by higher values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	342	338	-	MD 0.03 higher (0 to 0.07 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D VAS change scores at 3 months (Better indicated by higher values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	341	342	-	MD 0.1 higher (2.26 lower to 2.46 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by PDQ-39 summary index change scores at 9 months (Better indicated by lower values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	325	327	-	MD 1.1 lower (2.67 lower to 0.47 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D quotient change scores at 9 months (Better indicated by higher values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	321	322	-	MD 0.03 higher (0.01 lower to 0.07 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D VAS change scores at 9 months (Better indicated by higher values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	319	323	-	MD 1 higher (1.53 lower to 3.53 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by PDQ-39 summary index change scores at 15 months (Better indicated by lower values)												
1 (Clarke 2016)	randomised trials	very serious[1]	no serious inconsistency	serious[2]	no serious imprecision	none	310	319	-	MD 2.2 lower (3.92 to 0.48 lower)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D quotient change scores at 15 months (Better indicated by higher values)												

1 (Clarke 2016)	random-ised trials	very seri-ous[1]	no serious in-consistency	serious[2]	no serious imprecision	none	304	313	-	MD 0.04 higher (0 to 0.08 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D VAS change scores at 15 months (Better indicated by higher values)												
1 (Clarke 2016)	random-ised trials	very seri-ous[1]	no serious in-consistency	serious[2]	no serious imprecision	none	305	309	-	MD 1.1 higher (0.89 lower to 3.09 higher)	VERY LOW	CRITICAL
Carer quality of life as measured by SF-12 physical component change scores at 3 months (Better indicated by higher values)												
1 (Clarke 2016)	random-ised trials	very seri-ous[1]	no serious in-consistency	serious[2]	no serious imprecision	none	146	144	-	MD 0.5 higher (1.23 lower to 2.23 higher)	VERY LOW	IM-PORTANT
Carer quality of life as measured by SF-12 mental component change scores at 3 months (Better indicated by higher values)												
1 (Clarke 2016)	random-ised trials	very seri-ous[1]	no serious in-consistency	serious[2]	no serious imprecision	none	146	144	-	MD 2.1 higher (0.32 to 3.88 higher)	VERY LOW	IM-PORTANT

CI: confidence interval; EQ-5D VAS: EuroQol 5-dimensions visual analogue scale; MD: mean difference; NEADL: Nottingham extended activities of daily living: PDQ-39: Parkinson's disease questionnaire; SF-12: 12-item short form survey
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 Intervention is indirect due to inclusion of physiotherapy components aimed at improving symptoms such as gait, balance, and physical conditioning (outside of protocol)

Table 13: Evidence profile for comparison between interventions for personal activities for daily living and control in adults with Parkinson's disease

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Home-based occupational therapy**	**Usual care (with no occupational therapy)**	**Relative (95% CI)**	**Absolute**		
Functional independence as measured by COPM performance at 3 months follow-up (Better indicated by higher values)												
1 (Sturkenboom 2014)	random-ised trials	very se-rious[1]	no serious in-consistency	no serious in-directness	very serious[2]	none	122	63	-	Home-based occupational therapy	VERY LOW	CRITICAL

										(median [IQR]): 5.8 (5.0 to 6.4) Usual care (with no occupational therapy) (median [IQR]): 4.6 (4.6 to 6.6) p value < 0.0001[3]		
Functional independence as measured by COPM satisfaction at 3 months follow-up (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	122	63	-	Home-based occupational therapy (median [IQR]): 5.6 (3.8 to 5.5) Usual care (with no occupational therapy) (median [IQR]): 4.6 (3.8 to 5.8) p value < 0.0001[3]	VERY LOW	CRITICAL
Functional independence as measured by COPM performance at 6 months follow-up (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	120	61	-	Home-based occupational therapy (median [IQR]):	VERY LOW	CRITICAL

										5.7 (4.6 to 6.6) Usual care (with no occupational therapy) (median [IQR]): 4.7 (4.8 to 6.5) p value < 0.0001[3]		
Functional independence as measured by COPM satisfaction at 6 months follow-up (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	120	61	-	Home-based occupational therapy (median [IQR]): 5.6 (4.0 to 5.5) Usual care (with no occupational therapy) (median [IQR]): 4.8 (4.0 to 5.5) p value < 0.0001[3]	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by PDQ-39 at 3 months (Better indicated by lower values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	118	60	-	Home-based occupational therapy (median [IQR]):	VERY LOW	CRITICAL

										34.5 (23.3 to 42.1) Usual care (with no occupational therapy) (median [IQR]): 33.5 (23.2 to 45.0) p value = 0.135[4]		
Physical and mental health related quality of life as measured by EQ-5D at 3 months (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	119	62	-	Home-based occupational therapy (median [IQR]): 0.72 (0.57 to 0.81) Usual care (with no occupational therapy) (median [IQR]): 0.73 (0.57 to 0.81) p value = 0.351[4]	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by VAS for quality of life at 3 months (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	121	62	-	Home-based occupational therapy (median [IQR]):	VERY LOW	CRITICAL

										7.0 (6.0 to 7.5) Usual care (with no occupational therapy) (median [IQR]): 7.0 (5.0 to 7.0) p value = 0.183[4]		
Physical and mental health related quality of life as measured by PDQ-39 at 6 months (Better indicated by lower values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	119	60	-	Home-based occupational therapy (median [IQR]): 36.3 (26.1 to 45.3) Usual care (with no occupational therapy) (median [IQR]): 35.6 (23.9 to 42.9) p value = 0.056[4]	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D at 6 months (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	118	62	-	Home-based occupational therapy (median [IQR]):	VERY LOW	CRITICAL

										0.69 (0.57 to 0.81) Usual care (with no occupational therapy) (median [IQR]): 0.69 (0.57 to 0.78) p value = 0.475[4]		
Physical and mental health related quality of life as measured by VAS for quality of life at 6 months (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	120	61	-	Home-based occupational therapy (median [IQR]): 6.0 (5.1 to 7.0) Usual care (with no occupational therapy) (median [IQR]): 7.0 (5.3 to 7.0) p value = 0.822[4]	VERY LOW	CRITICAL
Carer quality of life as measured by ZBI at 3 months (Better indicated by lower values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	114	59	-	Home-based occupational therapy (median [IQR]):	VERY LOW	IMPORTANT

										18.0 (10.8 to 27.1) Usual care (with no occupational therapy) (median [IQR]): 22.0 (13.0 to 28.0) p value = 0.44[4]		
Carer quality of life as measured by EQ-5D at 3 months (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	112	58	-	Home-based occupational therapy (median [IQR]): 0.84 (0.78 to 1.00) Usual care (with no occupational therapy) (median [IQR]): 0.84 (0.78 to 1.00) p value = 0.006[3,5]	VERY LOW	IMPORTANT
Carer quality of life as measured by VAS for quality of life at 3 months (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	113	59	-	Home-based occupational therapy (median [IQR]):	VERY LOW	IMPORTANT

										7.5 (7.0 to 8.0) Usual care (with no occupational therapy) (median [IQR]): 7.5 (7.0 to 8.0) p value = 0.819[4]		
Carer quality of life as measured by ZBI at 6 months (Better indicated by lower values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	112	53	-	Home-based occupational therapy (median [IQR]): 19.0 (10.3 to 29.8) Usual care (with no occupational therapy) (median [IQR]): 24.0 (14.5 to 30.5) p value = 0.089[4]	VERY LOW	IMPORTANT
Carer quality of life as measured by EQ-5D at 6 months (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	104	59	-	Home-based occupational therapy (median [IQR]):	VERY LOW	IMPORTANT

										0.84 (0.78 to 1.00) Usual care (with no occupational therapy) (median [IQR]): 0.81 (0.78 to 1.00) p value = 0.109[4]		
Carer quality of life as measured by VAS for quality of life at 6 months (Better indicated by higher values)												
1 (Sturkenboom 2014)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	112	53	-	Home-based occupational therapy (median [IQR]): 7.0 (7.0 to 8.0) Usual care (with no occupational therapy) (median [IQR]): 7.0 (6.3 to 8.0) p value = 0.124[4]	VERY LOW	IMPORTANT

CI: confidence interval; COPM: Canadian occupational performance measure; EQ-5D: EuroQol 5-dimensions; IQR: interquartile range; PDQ-39: Parkinson's disease questionnaire; VAS: visual analogue scale; ZBI: Zarit burden index
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 Very serious imprecision due to sample size <200
3 Differences between groups judged to be statistically significant according to author analysis, favouring interventions for personal activities for daily living. Clinical significance could not be determined
4 No statistically significant difference between groups, according to author analysis

5 Author reports statistical difference but reported medians and IQR are exactly the same

Table 14: Evidence profile for comparison between interventions for community living skills and control in adults with acquired brain injury

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Personal digital assistant	Non-electronic memory aids	Relative (95% CI)	Absolute		
Functional independence as measured by FAI change scores at post-intervention (Better indicated by higher values)												
1 (De Joode 2013)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	19	10	-	MD 6.2 higher (1.82 to 10.58 higher)	VERY LOW	CRITICAL
Functional independence as measured by FAI change scores at 4-6 months follow-up (Better indicated by higher values)												
1 (De Joode 2013)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	10	9	-	MD 5.4 higher (0.2 lower to 11 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured SF-36 physical component change scores at post-intervention (Better indicated by higher values)												
1 (De Joode 2013)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	19	10	-	MD 3.7 lower (8.82 lower to 1.42 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by SF-36 mental component change scores at post-intervention (Better indicated by higher values)												
1 (De Joode 2013)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	19	10	-	MD 1.7 higher (5.21 lower to 8.61 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by LISAT-9 change scores at post-intervention (Better indicated by higher values)												
1 (De Joode 2013)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	19	10	-	MD 0.4 higher (3.75 lower to 4.55 higher)	VERY LOW	CRITICAL

Physical and mental health related quality of life as measured by SF-36 physical component change scores at 4-6 months follow-up (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	serious[2]	none	10	9	-	MD 3.4 lower (9.76 lower to 2.96 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by SF-36 mental component change scores at 4-6 months follow-up (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	very seri-ous[3]	none	10	9	-	MD 1.7 lower (9.36 lower to 5.96 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by LISAT-9 change scores at 4-6 months follow-up (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	serious[2]	none	10	9	-	MD 1 higher (3.61 lower to 5.61 higher)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS t-score change scores at post-intervention (Better indicated by higher values)												
2*	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	serious[2]	none	42	33	-	SMD 0.12 higher (0.34 lower to 0.58 higher)	VERY LOW	CRITICAL
Carer quality of life as measured by SF-36 physical component change scores at post-intervention (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	very seri-ous[3]	none	15	3	-	MD 0.9 higher (6.85 lower to 8.65 higher)	VERY LOW	IM-PORTANT
Carer quality of life as measured by SF-36 mental component change scores at post-intervention (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	very seri-ous[3]	none	15	3	-	MD 4.5 higher (5.8 lower to 14.8 higher)	VERY LOW	IM-PORTANT
Carer quality of life as measured by LISAT-9 change scores at post-intervention (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	serious[2]	none	15	3	-	MD 2.7 lower (6.94 lower to 1.54 higher)	VERY LOW	IM-PORTANT
Carer quality of life as measured by CSI change scores at post-intervention (Better indicated by lower values)												

1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	very seri-ous[3]	none	15	3	-	MD 2.1 higher (1.86 lower to 6.06 higher)	VERY LOW	IM-PORTANT
Carer quality of life as measured by SF-36 physical component change scores at 4-6 months follow-up (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	very seri-ous[3]	none	9	4	-	MD 1.9 higher (4.75 lower to 8.55 higher)	VERY LOW	IM-PORTANT
Carer quality of life as measured by SF-36 mental component change scores at 4-6 months follow-up (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	serious[2]	none	9	4	-	MD 4.3 lower (12.92 lower to 4.32 higher)	VERY LOW	IM-PORTANT
Carer quality of life as measured by LISAT-9 change scores at 4-6 months follow-up (Better indicated by higher values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	no serious impreci-sion	none	9	4	-	MD 5.8 lower (9.68 to 1.92 lower)	LOW	CRITICAL
Carer quality of life as measured by CSI change scores at 4-6 months follow-up (Better indicated by lower values)												
1 (De Joode 2013)	random-ised trials	very seri-ous[1]	no serious in-consistency	no serious indirect-ness	no serious impreci-sion	none	9	4	-	MD 4.9 higher (1.91 to 7.89 higher)	LOW	IM-PORTANT

CI: confidence interval; CSI: caregiver strain index; FAI: Frenchay activities index; GAS: goal attainment scale; MD: mean difference; LISAT-9: life satisfaction questionnaire; SF-12: 12-item short form survey: SMD: standardised mean difference
** See corresponding forest plot*
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 95% CI crosses 1 MID (0.5x control group SD, for FAI +/- 2.5; for SF-36 physical component +/- 5.1; for SF-36 mental component +/- 5.4; for LISAT-9 +/- 4.05; for GAS +/- 0.5; for SF-36 mental component for carers +/-5.45; for LISAT-9 for carers +/- 1.85)
3 95% CI crosses 2 MIDs (0.5x control group SD, for SF-36 mental component +/- 5.4, for SF-36 physical component for carers +/- 3; for SF-35 mental component for carers +/- 5.45; for CSI +/- 1.85)

Table 15: Evidence profile for comparison between interventions for community living skills and control in adults with Prader-Willi Syndrome

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Metacognitive strategy training of planning abilities with ETAPP	Usual care	Relative (95% CI)	Absolute		

Personal goal attainment as measured by GAS post-intervention (number of participants scoring -2 [goal attained much less than expected] on scale, assessed by participants)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	6/24 (25%)	3/22 (13.6%)	RR 1.83 (0.52 to 6.46)	113 more per 1000 (from 65 fewer to 745 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring -2 [goal attained much less than expected] on scale, assessed by occupational therapists)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	9/27 (33.3%)	6/25 (24%)	RR 1.39 (0.58 to 3.34)	94 more per 1000 (from 101 fewer to 562 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring -1 [goal attained less than expected] on scale, assessed by participants)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	3/24 (12.5%)	4/22 (18.2%)	RR 0.69 (0.17 to 2.73)	56 fewer per 1000 (from 151 fewer to 315 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring -1 [goal attained less than expected] on scale, assessed by occupational therapists)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	6/27 (22.2%)	8/25 (32%)	RR 0.69 (0.28 to 1.72)	99 fewer per 1000 (from 230 fewer to 230 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring 0 [goal attained as expected] on scale, assessed by participants)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	7/24 (29.2%)	7/22 (31.8%)	RR 0.92 (0.38 to 2.2)	25 fewer per 1000 (from 197 fewer to 382 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring 0 (goal attained as expected) on scale, assessed by occupational therapists)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	3/27 (11.1%)	5/25 (20%)	RR 0.56 (0.15 to 2.09)	88 fewer per 1000 (from 170 fewer to 218 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring +1 [goal attained more than expected] on scale, assessed by participants)												

1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	2/24 (8.3%)	4/22 (18.2%)	RR 0.46 (0.09 to 2.26)	98 fewer per 1000 (from 165 fewer to 229 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring +1 [goal attained more than expected] on scale, assessed by occupational therapists)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	4/27 (14.8%)	3/25 (12%)	RR 1.23 (0.31 to 4.98)	28 more per 1000 (from 83 fewer to 478 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring +2 [goal attained much more than expected] on scale, assessed by participants)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	6/24 (25%)	4/22 (18.2%)	RR 1.38 (0.45 to 4.24)	69 more per 1000 (from 100 fewer to 589 more)	VERY LOW	CRITICAL
Personal goal attainment as measured by GAS post-intervention (number of participants scoring +2 [goal attained much more than expected] on scale, assessed by occupational therapists)												
1 (Estival 2021)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	5/27 (18.5%)	3/25 (12%)	RR 1.54 (0.41 to 5.8)	65 more per 1000 (from 71 fewer to 576 more)	VERY LOW	CRITICAL

CI: confidence interval; ETAPP: evaluation of a therapeutic aid of the planning function in Prader-Willi syndrome: GAS: goal attainment scale; RR: risk ratio
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 95% CI crosses 2 MIDs (for personal goal attainment 0.8 and 1.25)

Table 16: Evidence profile for comparison between interventions for functional mobility and control in adults with Parkinson's disease

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Sensory-motor foot orthosis plus physiotherapy balance programme**	**Physiotherapy balance programme**	**Relative (95% CI)**	**Absolute**		
Physical and mental health related quality of life as measured by PDQ-39 change scores at post-intervention (Better indicated by lower values)												
1 (Volpe 2017)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	8	10	-	MD 6.16 higher (8.23 lower to 20.55 higher)	VERY LOW	CRITICAL

Physical and mental health related quality of life as measured by PDQ-39 change scores at 1 month follow-up (Better indicated by lower values)													
1 (Volpe 2017)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	8	10	-	MD 13.35 higher (1.63 lower to 28.33 higher)	VERY LOW	CRITICAL

CI: confidence interval; MD: mean difference; PDQ-39: Parkinson's disease questionnaire
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 95% CI crosses 2 MIDs (0.5x control group SD, for PDQ-39 +/-7.19)

Table 17: Evidence profile for comparison between technological interventions and control in adults with Parkinson's disease

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Technological interventions**	**Control**	**Relative (95% CI)**	**Absolute**		
Functional independence as measured by Schwab ADL change scores at post-intervention - Virtual coach and telerehabilitation with daily life monitoring system versus standard clinical practice (Better indicated by higher values)												
1 (Del Pino 2023)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	no serious imprecision	none	10	8	-	MD 30.5 higher (14.61 to 46.39 higher)	LOW	CRITICAL
Functional independence as measured by ADL post-intervention - Home automated training versus traditional training (Scale 0-6, better indicated by higher values)												
1 (Latella 2022)	randomised trials	serious[2]	no serious inconsistency	no serious indirectness	very serious[3]	none	20	20	-	Home automation training (median [IQR]): 5.0 (4.7 to 6.0) Traditional training (median [IQR]): 5.0 (4.0 to 6.2) p value < 0.001[4]	VERY LOW	CRITICAL
Functional independence as measured by IADL post-intervention - Home automated training versus traditional training (Better indicated by higher values)												

1 (Latella 2022)	randomised trials	serious[2]	no serious inconsistency	no serious indirectness	very serious[3]	none	20	20	-	Home automation training (median [IQR]): 7.0 (5.7 to 7.2) Traditional training (median [IQR]): 6.0 (5.7 to 6.0) p value < 0.001[4]	VERY LOW	CRITICAL
Functional independence as measured UPDRS II change scores at post-intervention - Virtual coach and telerehabilitation with daily life monitoring system versus standard clinical practice (Better indicated by lower values)												
1 (Del Pino 2023)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[5]	none	10	8	-	MD 1.4 lower (8.04 lower to 5.24 higher)	VERY LOW	CRITICAL
Functional independence as measured by UPDRS II change scores at 12 months follow-up - Home-based motor monitoring plus standard in-office management versus standard in-office management (Better indicated by lower values)												
1 (Cubo 2017)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[5]	none	17	18	-	MD 1.88 lower (7.27 lower to 3.51 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by SF-12 post-intervention - Home automated training versus traditional training (Better indicated by higher values[6])												
1 (Latella 2022)	randomised trials	serious[2]	no serious inconsistency	no serious indirectness	very serious[3]	none	20	20	-	Home automation training (median [IQR]): 34.0 (28.7 to 37.2) Traditional training (median [IQR]): 29.5 (25.5 to 34.2) p value < 0.001[4]	VERY LOW	CRITICAL
Carer quality of life as measured by ZBI change scores at 12 months follow-up - Home-based motor monitoring plus standard in-office management versus standard in office management (Better indicated by lower values)												
1 (Cubo 2017)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[7]	none	17	18	-	MD 3.41 higher (3.52 lower to 10.34 higher)	VERY LOW	IMPORTANT

ADL: activities of daily living; CI: confidence interval; IADL: instrumental activities of daily living scale; IQR: interquartile range; MD: mean difference; SF-12: 12-item short form survey UPDRS II: unified Parkinson's disease rating scale part 2; ZBI: Zarit burden index
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 Serious risk of bias in the evidence contributing to the outcomes as per RoB2
3 Very serious imprecision due to sample size <200
4 Differences between groups judged to be statistically significantly different according to author analysis, favouring technological interventions. Clinical significance could not be determined
5 95% CI crosses 2 MIDs (0.5x control group SD, for UPDRS II +/-2.7 (Del Pino); for UPDRS II (Cubo) +/-3.14)
6 Paper reports that lower scores indicate a better quality of life, but this is not how scale is usually interpreted and not how it is reported in the narrative discussion of results
7 95% CI crosses 1 MID (0.5x control group SD, for ZBI +/-6.65)

Table 18: Evidence profile for comparison between wearable technology and control in adults with multiple sclerosis

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Functional electrical stimulation	Ankle-foot orthosis	Relative (95% CI)	Absolute		
Physical and mental health related quality of life as measured by EQ-5D VAS change scores at 3 months follow-up (Better indicated by higher values)												
1 (Renfrew 2019)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	37	32	-	MD 2.3 higher (3.78 lower to 8.38 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D VAS change scores at 6 months follow-up (Better indicated by higher values)												
1 (Renfrew 2019)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	37	26	-	MD 3 higher (3.78 lower to 9.78 higher)	VERY LOW	CRITICAL
Physical and mental health related quality of life as measured by EQ-5D VAS change scores at 12 months follow-up (Better indicated by higher values)												
1 (Renfrew 2019)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	31	22	-	MD 3 higher (3.97 lower to 9.97 higher)	VERY LOW	CRITICAL

CI: confidence interval; EQ-5D VAS: EuroQol 5-dimensions visual analogue scale; MD: mean difference
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 95% CI crosses 1 MID (0.5 control group SD, for EQ-5D VAS +/-8.25)

Table 19: Evidence profile for comparison between interventions for upper limb function and control in adults with Parkinson's disease

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Dynamic elastomeric fabric orthosis for upper limb	Waitlist control	Relative (95% CI)	Absolute		
Physical and mental health related quality of life as measured by PDQ-39 change scores at post-intervention (Better indicated by higher values)												
1 (Jiménez-Barrios 2023)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	22	16	-	MD 0.19 higher (4.78 lower to 5.17 higher)	VERY LOW	CRITICAL

CI: confidence interval; MD: mean difference; PDQ-39: Parkinson's disease questionnaire
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 95% CI crosses 2 MIDs (0.5x control group SD +/-4.157)

Table 19: Evidence profile for comparison between interventions for upper limb function and control in adults with Parkinson's disease

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Sensory dynamic orthosis arm sleeve	Non-compressive pro-Tem arm sleeve	Relative (95% CI)	Absolute		
Functional independence as measured by COPM performance post-intervention (Better indicated by higher values)												
1 (Miller 2015)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	11	8	-	Sensory dynamic orthosis arm sleeve (median [IQR[3]]): 0 (1.2) Non-compressive pro-Tem arm sleeve (median [IQR[3]]): 1.1 (1.65) p value = 0.01[3]	VERY LOW	CRITICAL
Functional independence as measured by COPM satisfaction post-intervention (Scale 1-10, better indicated by higher values)												

1 (Miller 2015)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	11	8	-	Sensory dynamic orthosis arm sleeve (median [IQR[3]]): 0 (2.0) Non-compressive pro-Tem arm sleeve (median [IQR[3]]): 0.9 (3.35) p value = 0.09[4]	VERY LOW	CRITICAL

CI: confidence interval; COPM: Canadian occupational performance measure; IQR: interquartile range
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 Very serious imprecision due to sample size <200
3 IQR incorrectly reported in paper as 1 value rather than a range between 2
3 Differences between groups judged to be statistically significant according to author analysis, favouring control group. Clinical significance could not be determined
4 No statistically significant difference between groups, according to author analysis

Table 20: Evidence profile for comparison between swallowing exercises, manoeuvres and programmes and swallow re-training by Speech and Language Therapists versus placebo (sham) in adults with Parkinson's Disease

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	**Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**Expiratory muscle strength training**	**Sham expiratory muscle strength training**	**Relative (95% CI)**	**Absolute**		
Swallowing related quality of life as measured by SWQoL at 4 weeks follow-up (Better indicated by higher values)												
1 (Claus 2021)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	25	25	-	MD 14.69 higher (0.95 lower to 30.33 higher)	LOW	CRITICAL
Swallowing related quality of life as measured by SWQoL at 3 months follow-up (Better indicated by higher values)												
1 (Claus 2021)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[2]	none	24	21	-	MD 11.40 higher (5.45 lower to 28.25 higher)	LOW	CRITICAL

CI: confidence interval; MD: mean difference; SWQoL: swallowing related quality of life

1 Serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 95% CI crosses 1 MID (0.5x control group SD, for SWQoL at baseline: +/-13.26, SWQoL at 4 weeks: +/-14.79, SWQoL at 3 months: +/-15.37)

Table 21: Evidence profile for comparison between neuromuscular electrical stimulation or pharyngeal stimulation, transcranial direct current or magnetic stimulation and control in adults with amyotrophic lateral sclerosis

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Pharyngeal electrical stimulation plus standard logopaedic therapy	Standard logopaedic therapy	Relative (95% CI)	Absolute		
Functional independence as measured by ALSFRS-R at 4 days follow-up (Better indicated by higher values)												
1 (Herrmann 2022)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	9	8	-	Pharyngeal electrical stimulation plus standard logopaedic therapy (median [IQR]): 0.0 (-3.0 to 2.0) Standard logopaedic therapy (median [IQR]): 0. 0 (-1.0 to 2.0) p value >0.99[3]	VERY LOW	CRITICAL
Functional independence as measured by ALSFRS-R at 1 month follow-up (Better indicated by higher values)												
1 (Herrmann 2022)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	7	10	-	Pharyngeal electrical stimulation plus standard logopaedic therapy (median [IQR]): -1.5 (-6.8 to 1.5) Standard logopaedic therapy (median [IQR]): -1.0 (-4.0 to 0.0) p value < 0.99[3]	VERY LOW	CRITICAL
Functional independence as measured by ALSFRS-R at 3 months follow-up (Better indicated by higher values)												

1 (Herrmann 2022)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	4	9	-	Pharyngeal electrical stimulation plus standard logopaedic therapy (median [IQR]): -0.5 (-1.0 to 1.5) Standard logopaedic therapy (median [IQR]): -1.0 (-7.5 to 0.5) p value = 0.54[3]	VERY LOW	CRITICAL
Swallowing related quality of life as measured by SWQoL at 1 day follow-up (Better indicated by higher values)												
1 (Herrmann 2022)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	9	10	-	Pharyngeal electrical stimulation plus standard logopaedic therapy (median [IQR]): 9.5 (-3.8 to 24.0) Standard logopaedic therapy (median [IQR]): -2.0 (-11.0 to 13.0) p value = 0.29[3]	VERY LOW	CRITICAL
Swallowing related quality of life as measured by SWQoL at 4 days follow-up (Better indicated by higher values)												
1 (Herrmann 2022)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	9	8	-	Pharyngeal electrical stimulation plus standard logopaedic therapy (median [IQR]): 0.5 (-17.0 to 16.0) Standard logopaedic therapy (median [IQR]): 3.0 (-17.0 to 21.0) p value = 0.52[3]	VERY LOW	CRITICAL
Swallowing related quality of life as measured by SWQoL at 1 month follow-up (Better indicated by higher values)												

1 (Herrmann 2022)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	7	10	-	Pharyngeal electrical stimulation plus standard logopaedic therapy (median [IQR]): -6.0 (-12.0 to 8.5) Standard logopaedic therapy (median [IQR]): 0.0 (-17.0 to 11.0) p value = 0.93[3]	VERY LOW	CRITICAL
Swallowing related quality of life as measured by SWQoL at 3 months follow-up (Better indicated by higher values)												
1 (Herrmann 2022)	randomised trials	very serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	4	9	-	Pharyngeal electrical stimulation plus standard logopaedic therapy (median [IQR]): 4.0 (4.0 to 9.0) Standard logopaedic therapy (median [IQR]): -4.0 (-36.0 to 3.3) p value = 0.07[3]	VERY LOW	CRITICAL

ALSFRS-R: revised amyotrophic lateral sclerosis functional rating scale; CI: confidence interval; IQR: interquartile range; SWQoL: swallowing related quality of life
1 Very serious risk of bias in the evidence contributing to the outcomes as per RoB2
2 Very serious imprecision due to sample size<200
3 No statistically significant difference between groups, according to author analysis

Appendix G Economic evidence study selection

Study selection for: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Please see Supplement 2 for details on study selection.

Appendix H Economic evidence tables

Economic evidence tables for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Table 22: Economic evidence tables for occupational therapy with or without physiotherapy in people with Parkinson's disease

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
Clarke 2016 UK Cost-utility analysis Cost-utility analysis Source of funding: Health Technology Assessment programme of the National Institute for Health Research	Combined occupational therapy (OT) and physiotherapy (PT) - delivered in the community and outpatient clinics by qualified therapists working within the NHS - therapy was tailored to the individual patient's requirements using a joint goal-setting approach - OT predominant interventions were equipment provision (such as bed levers or adaptive cutlery) and onward referral (such as speech and language therapy and	People with idiopathic Parkinsons disease (PD) -Mean age (years): 70 -Mean duration of PD (years): 4.5 in the intervention and 4.6 in the control group Economic evaluation alongside an RCT (Clarke 2016) Source of baseline data: RCT (N=762) Source of effectiveness data: RCT (N=617) Source of resource use data: RCT study participants (N=762)	Costs: - therapy services (PT/OT/speech and language therapist) - primary care (GP clinic appointment, GP home visits, practice nurse clinic appointment, practice nurse home visits) - social care (health visitor, social worker) - hospital costs (inpatient care, outpatient attendance, accident and emergency attendance, daycare admission, PD nurse) - aids and adaptations (wheelchair, grab rail, hoist, walking stick, low-level bath, new bath/shower, relocation of bath/shower room, relocation of toilet, shower over bath,	ICER: £3,493 per QALY (95% CI: –£169,371 to £176,358) Probability of being cost effective: 50.5% at a threshold of £20,000 per QALY Subgroup analysis: - None undertaken as there was no evidence of a difference in treatment effect at three months according to baseline Nottingham Extended Activities of Daily Living (NEADL) total score, disease severity or age	Perspective: NHS and Personal Social Services Currency: UK£ Cost year: 2012 Time horizon: 15 months Discounting: NA Applicability: Directly Limitations: Minor

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
	cognitive assessment), with other advice including how to manage sleep problems and how to apply for state benefits - PT prescribed a range of exercise programmes (such as gait and indoor mobility, posture, balance and falls, physical conditioning, transfers, upper limb function, outdoor mobility, leisure-related activities, domestic activities of daily living, self-care, other (for example, handwriting practice), work-related activities) and also included walking aids - the median number of therapy sessions, including initial assessments, was four - the mean duration of therapy was eight weeks	Source of unit cost data: National sources including Personal Social Services Research Unit, NHS National Reference Costs	shower replacing bath, stair lift, single concrete ramp) Mean cost per participant over 15 months: Intervention: £1,708 (95% CI: £1,379 to £2,072) Control: £1,541 (95% CI: £1,329 to £1,752) Difference: £164 (95% CI: –£141 to £468) Primary measure of outcome: QALYs (EQ-5D-3L) Mean QALYs per participant over 15 months: Intervention: 0.791 (95% CI: 0.765 to 0.818) Control: 0.764 (95% CI: 0.737 to 0.791) Difference: 0.027 (95% CI: –0.010 to 0.065)	Sensitivity analysis: None undertaken	

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
	Comparator: No therapy				
Sturkenboom 2015 Netherlands Cost-utility analysis Source of funding: Prinses Beatrix Spierfonds and Parkinson Vereniging	Occupational therapy (OTiP) - delivered within the context of specialised networks for Parkinson's disease (ParkinsonNet) -patients and their caregivers received ten weeks (maximum, 16h) of individualised therapy according to the Dutch guidelines of occupational therapy in Parkinson's disease (PD) -delivered by 18 trained occupational therapists in the patient's home environment and focused on improving performance in daily activities selected and prioritised by the patient -caregivers' needs in supporting the patient in daily activities were evaluated and addressed if required	People with PD and their primary caregivers Mean age (years) -Intervention: 71.0 -Control: 70.0 Mean disease duration (years): 6 years in both groups Economic evaluation alongside an RCT (Sturkenboom 2014) Source of baseline data: people with PD from an RCT (N=191), caregivers (N=180) Source of effectiveness data: people with PD from an RCT (N=185) and caregivers (N=166) Source of resource use data: RCT, N=unclear	Costs: healthcare visits and medication, institutional care, aids and adaptations, homecare, OTiP intervention Mean difference in patient costs per participant over 6 months: -€526 Mean difference in costs per carer over 6 months: -€32 Primary measure of outcome: EQ-5D-3L scores, valued using tariffs for the Dutch population Mean difference in patient EQ-5D-3L scores over 6 months: 0.02 (95% CI: -0.03 to 0.07) Mean difference in caregiver EQ-5D-3L scores over 6 months: 0.04 (95% CI: -0.01 to 0.09)	ICERs: Intervention dominant Probability of being cost-effective: reported only from a social perspective. Subgroup analysis: NR Sensitivity analysis: NR	Perspective: Societal but healthcare costs could be estimated Currency: Euro Cost year: Unclear (unit cost sources range from 2010 to 2013) Time horizon: 6 months Discounting: NA Applicability: Partially Limitations: Minor Other comments: - The primary analysis was from a societal perspective. The differences in resource item costs estimated using a linear mixed model with adjustment for baseline were used to approximate healthcare costs only. - The difference in costs was not significant from a societal perspective.

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
	Possible interventions for the patient: -use of alternative and compensatory strategies to improve task performance (for example, use of cues, reorganising complex performance sequences, focused attention, and cognitive strategies such as time pressure management -advice on optimisation of daily routines and simplification of activities -advice on appropriate aids and adaptations in the environment to enhance independence, efficiency, and safety Possible interventions for the caregiver included: -provision of information (effect of disease on the daily	Source of unit cost data: national (standard prices as stated in the Dutch manual for costing, the Healthcare Insurance Board reference database, the Dutch reference database for medication, and the Dutch online database for adaptive equipment)			

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
	functioning of the patient, possible care resources, aids, and adaptations) -training skills to support and supervise the patient in their daily activities Comparator: No intervention Both groups could receive all other medical, psychosocial, or allied healthcare interventions as usual.				

CI: confidence interval; EQ-5D-3L: EuroQol 5-dimensions 3-level; GP: general practitioner; ICER: incremental cost-effectiveness ratio; NA: not applicable; NEADL: Nottingham extended activities of daily living; NHS: national health service; N: number of people; NR: not reported; OT: occupational therapy; PD: parkinson's disease; PT: physiotherapy; QALY: quality-adjusted life year; RCT: randomised controlled trial; UK: United Kingdom

Table 23: Economic evidence table for home-based motor monitoring in people with idiopathic advanced Parkinson's disease

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
Cubo 2017 Spain	Home-based motor monitoring (HBMM) plus standard in-office visits (standard follow-up)	People with idiopathic advanced PD, defined as having a motor complications score >4 on the	Costs: -Medical assistance costs (medical visits, hospitalization,	ICERs: €126.72 per point improvement on the UPDRS scale	Perspective: Healthcare and social care Currency: Euro (€)

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
Cost-effectiveness and cost-utility analysis Source of funding: Great Lakes Neuro-Technologies Inc., Cleveland, Ohio, US	-PD motor symptoms were monitored at home one day per month using a Kinesia home device -The Kinesia system included a tablet software app, a wireless finger-worn motion sensor unit, and automated web-based symptom reporting - The patients were instructed to perform 3–6 motor assessments on the monthly assessment day and complete a diary collecting patient-reported structured questionnaires about bradykinesia, rigidity, falls, physical exercise, walking, and sleep problems over the previous week -During each of the four in-office visits, several clinical rating scales were administered	Unified Parkinson's Disease Rating Scale (UPDRS) - mean age (years): 66 - time since diagnosis: NR Economic evaluation alongside an RCT (Cubo 2017) Source of baseline data: RCT study participants (N=40) Source of effectiveness data: RCT study participants (N=35) Source of resource use data: RCT study participants (N=35) Source of unit cost data: National	and goods and services used in the prevention, diagnosis, or treatment) - Antiparkinsonian and other pharmacological treatments - Non-medical costs (transportation, social services, paid caregivers, adaptation of accommodation, and any other special equipment) - Paid caregivers' costs - The Kinesia system, including device costs and delivery costs to the patients Mean cost per participant: Intervention: €26,851 Control: €22,272 Difference: €4,580, p = 0.25 Primary measure of outcome: Unified Parkinson's Disease Rating Scale (UPDRS-total score), QALYs based on EQ-5D-3L valued using tariff for the Spanish population. Mean UPDRS-total score per participant: Intervention: 216.07	Intervention dominated using QALYs (lower QALYs and higher costs) Probability of being cost-effective: NR Subgroup analysis: NR Sensitivity analysis: NR	Cost year: Unclear (likely 2013) Time horizon: 12 months Discounting: NA Applicability: Partially Limitations: Potentially serious Other comments: - Patients already receiving therapies for advanced PD giving a small window for substantial treatment changes - Although patients were randomized, more patients with LCIG (levodopa-carbidopa intestinal gel) and deep brain stimulation were allocated in the HBMM group at baseline, with subsequent higher trends for medical requirements and costs - As a result of an intervention, more people were identified as eligible for therapies, resulting in higher medical costs

Study country and type	Intervention and comparator	Study population, design and data sources	Costs and outcomes (descriptions and values)	Results	Comments
	Comparator: In-office visits alone (four visits)		Control: 252.21 Difference: –36.14 Mean QALYs per participant: Intervention: 0.48 Control: 0.51 Difference: –0.03		

EQ-5D-3L: EuroQol 5-dimensions 3-level; HBMM: home-based motor monitoring; LCIG: levodopa-carbidopa intestinal gel; NA: not applicable; N: sample size; NR: not reported; NS: not significant; PD: parkinson's disease; QALY: quality-adjusted life year; RCT: randomised controlled trial; UK: United Kingdom; UPDRS: unified parkinson's disease rating scale

Appendix I Economic model

Economic model for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

No economic analysis was conducted for this review question.

Appendix J Excluded studies

Excluded studies for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

Excluded effectiveness studies

Table 24: Excluded studies and reasons for their exclusion

Study	Reason for exclusion
Abarghuei, A.F. and Karimi, M.T. (2022) Evaluation the Efficiency of Electrical Stimulation Advanced Methods on Management of Bowel and Bladder Functions in Spinal Cord Injury Subject; A Systematic Review of Literature. Bulletin of Emergency and Trauma 10(1): 1-8	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Abonie, Ulric S and Hettinga, Florentina J (2020) Effect of a Tailored Activity Pacing Intervention on Fatigue and Physical Activity Behaviours in Adults with Multiple Sclerosis. International journal of environmental research and public health 18(1)	- Outcomes No relevant outcomes reported. Reports measures of engagement in pacing and perceived risk of overactivity, fatigue, and physical activity.
Advocat, Jenny, Enticott, Joanne, Vandenberg, Brooke et al. (2016) The effects of a mindfulness-based lifestyle program for adults with Parkinson's disease: a mixed methods, wait list controlled randomised control study. BMC neurology 16: 166	- Intervention Mindfulness-based lifestyle programme. Note: Programme additionally included 'strategies designed to help them [participants] to live better with a chronic disease' (page 3) but no further details on content of techniques or if they were aimed at activities of daily living or any other protocol intervention.
Afrasiabifar, Ardashir; Mehri, Zahra; Ghaffarian Shirazi, Hamid Reza (2020) Orem's Self-Care Model with Multiple Sclerosis Patients' Balance and Motor Function. Nursing science quarterly 33(1): 46-54	- Country Study conducted in Iran.
Ahmadi Bani, Monireh, Arazpour, Mokhtar, Farahmand, Farzam et al. (2015) The efficiency of mechanical orthoses in affecting parameters associated with daily living in spinal cord injury patients: a literature review. Disability and rehabilitation. Assistive technology 10(3): 183-90	- Publication date Systematic review with 1/20 studies published 2013 orwards, and 19/20 published pre-2013. Study published 2013 or onwards was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Ahmed Hassanin, Mohamed, Aly, Maya G, Atef, Hady et al. (2023) Task-oriented training for upper limb functions in patients with multiple sclerosis: Systematic review and meta-analysis. Multiple sclerosis and related disorders 73: 104625	- Country Systematic review with 2/5 of the included studies conducted in Italy, 1/5 in Belgium, 1/5 in Turkey and 1/5 in the US. Italian and Belgian studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Aida, J.; Chau, B.; Dunn, J. (2018) Immersive virtual reality in traumatic brain injury rehabilitation: A literature review. NeuroRehabilitation 42(4): 441-448	- Publication type Literature review, not a systematic review.
Alali, Dalal; Ballard, Kirrie; Bogaardt, Hans (2016) Treatment Effects for Dysphagia in	- Publication date

Study	Reason for exclusion
Adults with Multiple Sclerosis: A Systematic Review. Dysphagia 31(5): 610-8	Systematic review with 1/5 studies published 2013 or onwards, and 4/5 published pre-2013. Study published 2013 onwards was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Alashram, Anas R, Annino, Giuseppe, Padua, Elvira et al. (2019) Cognitive rehabilitation post traumatic brain injury: A systematic review for emerging use of virtual reality technology. Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia 66: 209-219	- Study design (adults) Systematic review with 4/9 randomised controlled trials, 3/9 case studies, and 2/9 non-controlled trials. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Allin, Sonya, Shepherd, John, Thorson, Teri et al. (2020) Web-Based Health Coaching for Spinal Cord Injury: Results From a Mixed Methods Feasibility Evaluation. JMIR rehabilitation and assistive technologies 7(2): e16351	- Outcomes No relevant outcomes reported. Reports measures of health-related self-efficacy, emotional and physical health status, and electronic health literacy.
Ancona, E., Quarenghi, A., Simonini, M. et al. (2019) Effect of verticalization with Erigo in the acute rehabilitation of severe acquired brain injury. Neurological Sciences 40(10): 2073-2080	- Intervention Erigo® lower limb robotic assisted training system and not a postural system or robotic orthosis. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
Arbesman, Marian and Sheard, Kendra (2014) Systematic review of the effectiveness of occupational therapy-related interventions for people with amyotrophic lateral sclerosis. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 68(1): 20-6	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Babcock, Lynn, Kurowski, Brad G, Zhang, Nanhua et al. (2017) Adolescents with mild traumatic brain injury get SMART: An analysis of a novel web-based intervention. Telemedicine and e-Health 23(7): 600-607	- Country Study conducted in the US.
Baijens, Laura W J, Speyer, Renee, Passos, Valeria Lima et al. (2013) Surface electrical stimulation in dysphagic Parkinson patients: a randomized clinical trial. The Laryngoscope 123(11): e38-44	- Study design (adults) Non-randomised controlled trial. Note: Study authors describe allocation as 'quasi-randomised'.
Baron, Justine S, Sullivan, Katrina J, Swaine, Jillian M et al. (2018) Self-management interventions for skin care in people with a spinal cord injury: part 1-a systematic review of intervention content and effectiveness. Spinal cord 56(9): 823-836	- Country Systematic review with 1/15 of the included studies conducted in Canada, 1/15 in the UK, 11/15 in the US, 1/15 in India, and 1/15 in Turkey. Canadian and UK studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Baroni, Andrea, Magro, Giacomo, Martinuzzi, Carlotta et al. (2022) Combined effects of cerebellar tDCS and task-oriented circuit training in people with multiple sclerosis: A pilot	- Intervention Cerebellar transcranial direct current stimulation that is not aimed at sustaining or improving capability in eating, drinking, and swallowing.

Study	Reason for exclusion
randomized control trial. Restorative neurology and neuroscience 40(2): 85-95	
Bassingthwaighte, Louise, Griffin, Janelle, Fleming, Jennifer et al. (2021) Evaluating the effectiveness of on-road driving remediation following acquired brain injury: A wait-list feasibility study with follow-up. Australian occupational therapy journal 68(2): 124-134	- Outcomes No relevant outcomes reported. Reports measures of fitness to drive and feasibility.
Baur, K., Schattin, A., De Bruin, E.D. et al. (2018) Trends in robot-assisted and virtual reality-assisted neuromuscular therapy: A systematic review of health-related multiplayer games. Journal of NeuroEngineering and Rehabilitation 15(1): 107	- Study design (adults) Systematic review with 3/13 randomised controlled trials, 6/13 non-controlled trials, and 4/13 non-randomised controlled trials. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Belveal, Kimberlyn, Gunkel-Lam, Stephanie, Hajare, Amanda et al. (2023) The effectiveness of nontraditional or home-based programing on ADL performance of individuals living with multiple sclerosis: A systematic review. Multiple sclerosis and related disorders 71: 104576	- Country Systematic review with 2/15 of the included studies conducted in Belgium, 2/15 in Italy, 1/15 in Germany, 1/15 in Switzerland, 1/15 in the UK, 5/15 in the US, 2/15 in Turkey, and 1/15 in Iran. Belgian, Italian, German, Swiss and UK studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Beom, J, Oh, BM, Choi, KH et al. (2015) Effect of Electrical Stimulation of the Suprahyoid Muscles in Brain-Injured Patients with Dysphagia. Dysphagia 30(4): 423-429	- Country Study conducted in South Korea.
Bermingham, Sarah L, Hodgkinson, Sarah, Wright, Sue et al. (2013) Intermittent self catheterisation with hydrophilic, gel reservoir, and non-coated catheters: a systematic review and cost effectiveness analysis. BMJ (Clinical research ed.) 346: e8639	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Bernard, Renaldo M, Seijas, Vanessa, Davis, Micheal et al. (2023) Mobile Health Self-management Support for Spinal Cord Injury: Systematic Literature Review. JMIR mHealth and uHealth 11: e42679	- Study design (adults) Systematic review with 5/24 mixed-methods studies, 2/24 randomised controlled trials, 7/24 non-randomised controlled trials, 4/24 qualitative studies, 3/24 reports, 2/24 non-controlled trials, and 1/24 protocol. Mixed-methods studies and randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Berriozabalgoitia, Rakel, Bidaurrazaga-Letona, Iraia, Otxoa, Erika et al. (2021) Overground Robotic Program Preserves Gait in Individuals With Multiple Sclerosis and Moderate to Severe Impairments: A Randomized Controlled Trial. Archives of physical medicine and rehabilitation 102(5): 932-939	- Outcomes No relevant outcomes reported. Reports measures of gait speed, lower extremity function, functional mobility, fatigue, attendance, and tolerance to the programme. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.

Study	Reason for exclusion
Bertens, Dirk, Kessels, Roy P C, Boelen, Danielle H E et al. (2016) Transfer effects of errorless Goal Management Training on cognitive function and quality of life in brain-injured persons. NeuroRehabilitation 38(1): 79-84	- Population Mix of participants in (28/60 people with traumatic brain injury, brain tumour, and autoimmune encephalitis) and out (32/60 adults with stroke) of protocol. Results not presented separately for target population.
Bertens, Dirk, Kessels, Roy P C, Fiorenzato, Eleonora et al. (2015) Do Old Errors Always Lead to New Truths? A Randomized Controlled Trial of Errorless Goal Management Training in Brain-Injured Patients. Journal of the International Neuropsychological Society : JINS 21(8): 639-49	- Population Mix of participants in (28/60 people with traumatic brain injury, brain tumour, and autoimmune encephalitis) and out (32/60 adults with stroke) of protocol. Results not presented separately for target population.
Bhidayasiri, Roongroj, Jitkritsadakul, Onanong, Boonrod, Nonglak et al. (2015) What is the evidence to support home environmental adaptation in Parkinson's disease? A call for multidisciplinary interventions. Parkinsonism & related disorders 21(10): 1127-32	- Study design (adults) Systematic review with 3/8 randomised controlled trials, 3/8 cross-sectional studies, and 2/8 non-controlled trials. Randomised controlled trials were checked against protocol criteria– 2 were identified as potentially relevant and retrieved for further screening.
Blikman, Lyan J M, van Meeteren, Jetty, Twisk, Jos W R et al. (2019) Energy Conservation Management for People With Multiple Sclerosis-Related Fatigue: Who Benefits?. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 73(4): 7304205040p1-7304205040p9	- Outcomes No relevant outcomes reported. Reports measures of fatigue severity, perception of fatigue, participation, self-efficacy, perceptions of disease, social support, mood, and coping styles.
Blikman, Lyan J, Huisstede, Bionka M, Kooijmans, Hedwig et al. (2013) Effectiveness of energy conservation treatment in reducing fatigue in multiple sclerosis: a systematic review and meta-analysis. Archives of physical medicine and rehabilitation 94(7): 1360-76	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Blikman, Lyan Jm, van Meeteren, Jetty, Twisk, Jos Wr et al. (2017) Effectiveness of energy conservation management on fatigue and participation in multiple sclerosis: A randomized controlled trial. Multiple sclerosis (Houndmills, Basingstoke, England) 23(11): 1527-1541	- Outcomes No relevant outcomes reported. Reports measures of functional independence (sub-scale scores only presented), quality of life (sub-scale scores only presented), fatigue, concentration problems due to fatigue, motivation, physical activity, social participation, quality of life, and energy conservation strategies.
Bloem, Bastiaan R; de Vries, Nienke M; Ebersbach, Georg (2015) Nonpharmacological treatments for patients with Parkinson's disease. Movement disorders : official journal of the Movement Disorder Society 30(11): 1504-20	- Intervention Systematic review with studies investigating aerobic exercise programmes, balance training, and combination exercise programmes. No studies checked against protocol criteria as did not include studies with the aim of improving or maintaining independence in activities of daily living.
Botelho, M., Pais, S., Guerreiro, C. et al. (2022) Impact of custom-made orthopedic footwear and plantar orthoses on quality of life and functionality of patients with diabetic neuropathic foot: A randomized clinical trial. Diabetes Epidemiology and Management 5: 100040	- Intervention Custom-made non-robotic orthopaedic footwear and plantar orthosis and not robotic gait orthoses or exoskeletons.

Study	Reason for exclusion
Brandt, Ase, Jensen, Max Peder, Soberg, Merete Schneekloth et al. (2020) Information and communication technology-based assistive technology to compensate for impaired cognition in everyday life: a systematic review. Disability and rehabilitation. Assistive technology 15(7): 810-824	- Study design (adults) Systematic review with 7/12 randomised controlled trials, 4/12 non-controlled trials, and 1/12 non-randomised controlled trial. Randomised controlled trials were checked against protocol criteria – 2 were identified as potentially relevant and retrieved for further screening.
Brenner, Rouven, Witzig-Brandli, Verena, Vetsch, Janine et al. (2022) Nursing Interventions Focusing on Self-efficacy for Patients With Multiple Sclerosis in Rehabilitation: A Systematic Review. International journal of MS care 24(4): 189-198	- Study design (adults) Systematic review with 2/4 non-randomised controlled trials and 2/4 non-controlled trials. No studies checked against protocol criteria as did not include any randomised controlled trials.
Buchignani, Bianca, Beani, Elena, Pomeroy, Valerie et al. (2019) Action observation training for rehabilitation in brain injuries: a systematic review and meta-analysis. BMC neurology 19(1): 344	- Population Systematic review including participants out of protocol (adults with stroke and people with cerebral palsy). No studies checked against protocol criteria as did not include any participants with chronic neurological disorders included in protocol.
Bunting-Perry, Lisette, Spindler, Meredith, Robinson, Keith M et al. (2013) Laser light visual cueing for freezing of gait in Parkinson disease: A pilot study with male participants. Journal of rehabilitation research and development 50(2): 223-30	- Country Study conducted in the US.
Byrnes-Blanco, Laura, Reed, Kyle, Dubey, Rajiv et al. (2023) A systematic literature review of ankle-foot orthosis and functional electrical stimulation foot-drop treatments for persons with multiple sclerosis. Prosthetics and orthotics international 47(4): 358-367	- Outcomes Systematic review reporting no relevant outcomes. Reports narrative summary of included studies and a selection of evidence statements made by authors. Studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Calabro, Rocco Salvatore, Bonanno, Mirjam, Torregrossa, William et al. (2023) Benefits of Telerehabilitation for Patients With Severe Acquired Brain Injury: Promising Results From a Multicenter Randomized Controlled Trial Using Nonimmersive Virtual Reality. Journal of medical Internet research 25: e45458	- Population Mix of participants in (17/60 people with traumatic brain injury) and out (43/60 adults with stroke) of protocol. Results not presented separately for target population.
Calabro, RS, Bonanno, M, Torregrossa, W et al. (2023) Do patients with severe acquired brain injury benefit from Telerehabilitation? Promising results from a multicentric randomised controlled trial using non-immersive virtual Reality. Journal of medical Internet research	- Population Mixed population including participants in (12/40 people with traumatic brain injury) and out (28/40 adults with stroke) of protocol. Results not presented separately for target population.
Calderone, A., Carta, D., Cardile, D. et al. (2023) Use of Virtual Reality in Patients with Acquired Brain Injury: A Systematic Review. Journal of Clinical Medicine 12(24): 7680	- Study design (adults) Systematic review with 6/13 randomised controlled trials, 6/13 non-randomised controlled trials, and 1/13 non-controlled studies. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.

Study	Reason for exclusion
Cantor, Joshua, Ashman, Teresa, Dams-O'Connor, Kristen et al. (2014) Evaluation of the short-term executive plus intervention for executive dysfunction after traumatic brain injury: a randomized controlled trial with minimization. Archives of physical medicine and rehabilitation 95(1): 1-9e3	- Country Study conducted in the US.
Cardoso, Lucas R L, Bochkezanian, Vanesa, Forner-Cordero, Arturo et al. (2022) Soft robotics and functional electrical stimulation advances for restoring hand function in people with SCI: a narrative review, clinical guidelines and future directions. Journal of neuroengineering and rehabilitation 19(1): 66	- Country Systematic review with 9/37 of the included studies conducted in Canada, 2/37 in Italy, 2/37 in Switzerland, 1/37 in Australia, 1/37 in Austria, 1/37 in France, 1/37 in Germany, 1/37 in Spain, 1/37 in the UK, 11/37 in the US, 5/37 in South Korea, 1/37 in Hong Kong, and 1/37 in India. Canadian, Italian, Swiss, Australian, Austrian, French, German, Spanish, and UK studies were checked against protocol criteria – 1 was identified as potentially relevant and retrieved for further screening.
Cargnin, Zulamar Aguiar; Schneider, Dulcineia Ghizoni; Rosa-Junior, Joanito Niquini (2023) Digital self-care in the management of spine musculoskeletal disorders: A systematic review and meta-analysis. Revista latino-americana de enfermagem 31: e3908	- Population Systematic review including participants out of protocol (people with spine musculoskeletal disorders [neck pain, back pain and low back pain]). No studies checked against protocol criteria as did not include studies with target population.
Cassimatis, Constantine, Liu, Karen P Y, Fahey, Paul et al. (2016) The effectiveness of external sensory cues in improving functional performance in individuals with Parkinson's disease: a systematic review with meta-analysis. International journal of rehabilitation research. Internationale Zeitschrift fur Rehabilitationsforschung. Revue internationale de recherches de readaptation 39(3): 211-8	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Celius, Elisabeth G and Vila, Carlos (2018) The influence of THC:CBD oromucosal spray on driving ability in patients with multiple sclerosis-related spasticity. Brain and behavior 8(5): e00962	- Study design (adults) Non-systematic literature review.
Chang, Pei-Fen J; Baxter, Mary Frances; Rissky, Jenna (2016) Effectiveness of Interventions Within the Scope of Occupational Therapy Practice to Improve Motor Function of People With Traumatic Brain Injury: A Systematic Review. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 70(3): 7003180020p1-5	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Charters, E; Gillett, L; Simpson, G K (2015) Efficacy of electronic portable assistive devices for people with acquired brain injury: a systematic review. Neuropsychological rehabilitation 25(1): 82-121	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Chartier-Kastler, Emmanuel, Amarenco, Gerard, Lindbo, Lena et al. (2013) A prospective, randomized, crossover, multicenter study	- Study design (adults)

Study	Reason for exclusion
comparing quality of life using compact versus standard catheters for intermittent self-catheterization. The Journal of urology 190(3): 942-7	Crossover randomised controlled trial with outcome data not presented at the end of the first intervention period.
Chasiotis, A.K., Kitsos, D.K., Stavrogianni, K. et al. (2023) Rehabilitation on cerebellar ataxic patients with multiple sclerosis: A systematic review. Journal of Neuroscience Research 101(12): 1773-1780	- Study design (adults) Systematic review with 3/6 randomised controlled trials, 2/6 non-controlled trials, and 1/6 non-randomised controlled trials. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Chau, Brian; Humbert, Sarah; Shou, Aaron (2021) Systemic Literature Review of the Use of Virtual Reality for Rehabilitation in Parkinson Disease. Federal practitioner : for the health care professionals of the VA, DoD, and PHS 38(suppl1): 20-s27	- Study design (adults) Systematic review with 15/28 randomised controlled trials, 7/28 non-controlled trials, and 6/28 non-randomised controlled trials. Randomised controlled trials were checked against protocol criteria – 1 was identified as potentially relevant and retrieved for further screening.
Cheung, Eddy Y Y, Ng, Thomas K W, Yu, Kevin K K et al. (2017) Robot-Assisted Training for People With Spinal Cord Injury: A Meta-Analysis. Archives of physical medicine and rehabilitation 98(11): 2320-2331e12	- Publication date Systematic review with 6/11 studies published 2013 onwards, and 5/11 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Choi, Ja Young, Yi, Sook-Hee, Ao, Lijuan et al. (2021) Virtual reality rehabilitation in children with brain injury: a randomized controlled trial. Developmental medicine and child neurology 63(4): 480-487	- Country Study conducted in China and South Korea.
Choi, Ja Young, Yi, Sook-Hee, Shim, Dain et al. (2023) Home-based virtual reality-enhanced upper limb training system in children with brain injury: a randomized controlled trial. Frontiers in pediatrics 11: 1131573	- Country Study conducted in South Korea.
Chuang, Chieh-Sen, Chen, Yen-Wen, Zeng, Bing-Yan et al. (2022) Effects of modern technology (exergame and virtual reality) assisted rehabilitation vs conventional rehabilitation in patients with Parkinson's disease: a network meta-analysis of randomised controlled trials. Physiotherapy 117: 35-42	- Country Systematic review with 2/23 of the included studies conducted in Australia, 2/23 in Italy, 1/23 in the Netherlands, 6/23 in Taiwan, 5/23 in Brazil, 4/23 in China, 2/23 in South Korea, and 1/23 in multiple countries. Australian, Italian, and Dutch studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Cisneros, E., Beausejour, V., de Guise, E. et al. (2021) The impact of multimodal cognitive rehabilitation on executive functions in older adults with traumatic brain injury. Annals of Physical and Rehabilitation Medicine 64(5): 101559	- Study design (adults) Non-randomised controlled trial. Note: Study authors describe allocation as 'semi-randomised'.
Clarke, Carl E, Patel, Smitaa, Ives, Natalie et al. (2016) Physiotherapy and Occupational Therapy vs No Therapy in Mild to Moderate Parkinson Disease: A Randomized Clinical Trial. JAMA neurology 73(3): 291-9	- Duplicate Same study as Clarke 2016 with no new data presented.

Study	Reason for exclusion
Collins, Tracey L; Cardella, Alexa; Gordon, Sarah (2023) The Impact of Assistive Technology on Quality of Life of Home-Dwelling People with Parkinson's Disease. Home healthcare now 41(4): 214-220	- Study design (adults) Systematic review with 2/6 randomised controlled trials, 2/6 non-controlled studies, 1/6 non-experimental study, and 1/6 qualitative studies. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Copley, J., Kuipers, K., Fleming, J. et al. (2013) Individualised resting hand splints for adults with acquired brain injury: A randomized, single blinded, single case design. NeuroRehabilitation 32(4): 885-898	- Population Mix of participants in (3/10 people with traumatic brain injury and brain aneurysm) and out (7/10 adults with stroke) of protocol. Results not presented separately for target population.
Cosentino, G, Gargano, R, Bonura, G et al. (2018) Anodal tDCS of the swallowing motor cortex for treatment of dysphagia in multiple sclerosis: a pilot open-label study. Neurological sciences : official journal of the Italian Neurological Society and of the Italian Society of Clinical Neurophysiology 39(8): 1471-1473	- Study design (adults) No comparator group, so not a randomised controlled trial.
Cosentino, Giuseppe, Tassorelli, Cristina, Prunetti, Paolo et al. (2020) Anodal transcranial direct current stimulation and intermittent theta-burst stimulation improve deglutition and swallowing reproducibility in elderly patients with dysphagia. Neurogastroenterology and motility : the official journal of the European Gastrointestinal Motility Society 32(5): e13791	- Outcomes No relevant outcomes reported. Reports measures of functional severity of dysphagia and electrokinesiographic changes in swallowing.
Cuesta-Gomez, Alicia, Sanchez-Herrera-Baeza, Patricia, Ona-Simbana, Edwin Daniel et al. (2020) Effects of virtual reality associated with serious games for upper limb rehabilitation inpatients with multiple sclerosis: randomized controlled trial. Journal of neuroengineering and rehabilitation 17(1): 90	- Intervention Serious Games virtual reality programme for upper limb functioning and not dynamic splints for upper limb functioning.
Cui, Fang, Sun, Liuqing, Xiong, Jianmei et al. (2018) Therapeutic effects of percutaneous endoscopic gastrostomy on survival in patients with amyotrophic lateral sclerosis: A meta-analysis. PloS one 13(2): e0192243	- Publication date Systematic review with 2/10 studies published 2013 onwards, and 8/10 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Cunningham, Rebecca and Uyeshiro Simon, Ashley (2022) Interventions for Instrumental Activities of Daily Living Among Adults With Multiple Sclerosis: A Systematic Review. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 76(2)	- Country Systematic review with 4/20 of the included studies conducted in the Netherlands, 3/20 in the UK, 1/20 in Ireland, 1/20 in Switzerland, and 11/20 in the US. Dutch, UK, Irish, and Swiss studies were checked against protocol criteria – 3 were identified as potentially relevant and retrieved for further screening.
Dall'Oglio, Immacolata, Gasperini, Giulia, Carlin, Claudia et al. (2021) Self-Care in Pediatric Patients with Chronic Conditions: A Systematic Review of Theoretical Models. International	- Country Systematic review with 1/17 of the included studies conducted in Finland, 1/17 in the UK, 14/17 in the US, and 1/17 in multiple countries. Finnish and UK studies were checked against protocol

Study	Reason for exclusion
journal of environmental research and public health 18(7)	criteria and were either not relevant or had been separately located by the literature search and screened.
de Araujo, Amanda Vitoria Lacerda, Neiva, Jaqueline Freitas de Oliveira, Monteiro, Carlos Bandeira de Mello et al. (2019) Efficacy of Virtual Reality Rehabilitation after Spinal Cord Injury: A Systematic Review. BioMed research international 2019: 7106951	- Country Systematic review with 5/25 of the included studies conducted in Spain, 4/25 in Switzerland, 3/25 in Italy, 2/25 in Canada, 1/25 in Australia, 1/25 in the Netherlands, 3/25 in the US, 2/25 in India, 2/25 in Taiwan, 1/25 in Japan, and 1/25 in South Korea. Spanish, Swiss, Canadian, Australian and Dutch studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
de Freitas, Bruna Leal, da Silva, Talita Dias, Crocetta, Tania Brusque et al. (2019) Analysis of Different Device Interactions in a Virtual Reality Task in Individuals With Duchenne Muscular Dystrophy-A Randomized Controlled Trial. Frontiers in neurology 10: 24	- Country Study conducted in Brazil.
Dehghani, Ali; Pourfarid, Yasaman; Hojat, Mohsen (2023) The effect of telenursing education of self-care on health-promoting behaviors in patients with multiple sclerosis during the COVID-19 pandemic: A clinical trial study. Multiple sclerosis and related disorders 70: 104507	- Country Study conducted in Iran.
DeMeyer, Lauren; Brown, Marcie; Adams, Ashley (2015) Effectiveness of a night positioning programme on ankle range of motion in patients after hemiparesis: a prospective randomized controlled pilot study. Journal of rehabilitation medicine 47(9): 873-7	- Country Study conducted in the US.
Devos, Hannes, Ranchet, Maud, Emmanuel Akinwuntan, Abiodun et al. (2015) Establishing an evidence-base framework for driving rehabilitation in Parkinson's disease: A systematic review of on-road driving studies. NeuroRehabilitation 37(1): 35-52	- Publication date Systematic review with 8/27 studies published 2013 onwards, and 19/27 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Dicianno, Brad E, Fairman, Andrea D, McCue, Michael et al. (2016) Feasibility of Using Mobile Health to Promote Self-Management in Spina Bifida. American journal of physical medicine & rehabilitation 95(6): 425-37	- Country Study conducted in the US.
Dimech-Betancourt, Bleydy, Ponsford, Jennie L, Charlton, Judith L et al. (2021) Investigating feasibility and preliminary efficacy of a simulator-based driving intervention for people with acquired brain injury: A randomised controlled pilot study. Clinical rehabilitation 35(9): 1277-1289	- Outcomes No relevant outcomes reported. Reports measures of driving abilities.
Dockx, Kim, Bekkers, Esther Mj, Van den Bergh, Veerle et al. (2016) Virtual reality for rehabilitation in Parkinson's disease. The	- Country Systematic review with 1/8 of the included studies conducted in the Netherlands, 2/8 in Brazil, 2/8 in Taiwan, 1/8 in China, 1/8 in Hong Kong, and 1/8

Study	Reason for exclusion
Cochrane database of systematic reviews 12: cd010760	in South Korea. Dutch study was checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Dogan, Mert; Ayvat, Ender; Kilinc, Muhammed (2023) Telerehabilitation versus virtual reality supported task-oriented circuit therapy on upper limbs and trunk functions in patients with multiple sclerosis: A randomized controlled study. Multiple sclerosis and related disorders 71: 104558	- Country Study conducted in Turkey.
Doruk, Can, Curtis, James A, Dakin, Avery E et al. (2023) Cough and Swallowing Therapy and Their Effects on Vocal Fold Bowing and Laryngeal Lesions. The Laryngoscope	- Country Study conducted in the US.
Downing, Abbey, Van Ryn, David, Fecko, Anne et al. (2014) Effect of a 2-week trial of functional electrical stimulation on gait function and quality of life in people with multiple sclerosis. International journal of MS care 16(3): 146-52	- Country Study conducted in the US.
Eldemir, Sefa, Guclu-Gunduz, Arzu, Eldemir, Kader et al. (2023) The effect of task-oriented circuit training-based telerehabilitation on upper extremity motor functions in patients with Parkinson's disease: A randomized controlled trial. Parkinsonism & related disorders 109: 105334	- Country Study conducted in Turkey.
Elena, P., Demetris, S., Christina, M. et al. (2021) Differences Between Exergaming Rehabilitation and Conventional Physiotherapy on Quality of Life in Parkinson's Disease: A Systematic Review and Meta-Analysis. Frontiers in Neurology 12: 683385	- Country Systematic review with 2/14 of the included studies conducted in Italy, 1/14 in Australia, 1/14 in the Netherlands, 4/14 in Brazil, 3/14 in Taiwan, 2/14 China, and 1/14 in Chile. Italian, Australian, and Dutch studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Engel, Lisa, Chui, Adora, Goverover, Yael et al. (2019) Optimising activity and participation outcomes for people with self-awareness impairments related to acquired brain injury: an interventions systematic review. Neuropsychological rehabilitation 29(2): 163-198	- Publication date Systematic review with 2/17 studies published 2013 onwards, and 15/17 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Essat, Munira, Archer, Rachel, Williams, Isobel et al. (2020) Interventions to promote oral nutritional behaviours in people living with neurodegenerative disorders of the motor system: A systematic review. Clinical nutrition (Edinburgh, Scotland) 39(8): 2547-2556	- Country Systematic review with 2/14 of the included studies conducted in Australia, 1/14 in Canada, 1/14 in Germany, 1/14 in Italy, 4/14 in the US, 3/14 in Brazil, 1/14 in China, and 1/14 in Israel. Australia, Canadian, German, and Italian studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Ettenhofer, Mark L, Guise, Brian, Brandler, Brian et al. (2019) Neurocognitive Driving Rehabilitation in Virtual Environments (NeuroDRIVE): A pilot clinical trial for chronic	- Country Study conducted in the US.

Study	Reason for exclusion
traumatic brain injury. NeuroRehabilitation 44(4): 531-544	
Eyssen, Isaline C J M, Steultjens, Martijn P M, de Groot, Vincent et al. (2013) A cluster randomised controlled trial on the efficacy of client-centred occupational therapy in multiple sclerosis: good process, poor outcome. Disability and rehabilitation 35(19): 1636-46	- Comparator Same intervention (occupational therapy programme) but varied in terms of how the intervention is designed and delivered (client-centred versus usual care) but not varied in terms of timing, frequency, or intensity.
Fallahzadeh Abarghuei, Abolghasem and Karimi, Mohammad Taghi (2022) The Effects of Lower Limb Orthoses on Health Aspects of the Spinal Cord Injury Patients: A Systematic Review Using International Classification of Functioning, Disability, and Health (ICF) as a Reference Framework. Medical journal of the Islamic Republic of Iran 36: 153	- Study design (adults) Systematic review with 5/47 randomised controlled trials, 12/47 cross-sectional studies, 10/47 case reports or studies, 7/47 case crossover studies, 6/47 case series, 5/47 cohort studies, and 2/47 crossover trials. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Fan, Mingchao, Wang, Qiaoling, Fang, Wei et al. (2016) Early Enteral Combined with Parenteral Nutrition Treatment for Severe Traumatic Brain Injury: Effects on Immune Function, Nutritional Status and Outcomes. Chinese medical sciences journal = Chung-kuo i hsueh k'o hsueh tsa chih 31(4): 213-220	- Country Study conducted in China.
Faria, Ana Lucia, Latorre, Jorge, Silva Cameirao, Monica et al. (2023) Ecologically valid virtual reality-based technologies for assessment and rehabilitation of acquired brain injury: a systematic review. Frontiers in psychology 14: 1233346	- Publication date 41/70 studies published 2013 onwards, and 29/70 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Fateh, Hamid Reza, Askary-Kachoosangy, Reihaneh, Shirzad, Niloofar et al. (2022) The effect of energy conservation strategies on fatigue, function, and quality of life in adults with motor neuron disease: Randomized controlled trial. Current journal of neurology 21(2): 83-90	- Country Study conducted in Iran.
Feldhacker, Diana R, Lucas Molitor, Whitney, Jensen, Lou et al. (2022) Occupational Therapy and the IMPACT Act: Part 2. A Systematic Review of Evidence for Functional Status, Medication Reconciliation, and Skin Integrity Interventions. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 76(1)	- Population Systematic review including participants in (26/47 people with neurological conditions), and out (5/47 older adults, 4/47 people with musculoskeletal disorders, 4/47 people with pressure ulcers, 3/47 people with psychiatric disorders, 1/47 people with cancer, 1/47 people with chronic obstructive pulmonary disease, 1/47 people with dementia, 1/47 people with general chronic health conditions, and 1/47 people with general complex conditions) of protocol. Results not presented separately for target population. Studies including participants with traumatic brain injury were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened. Note: Systematic review authors included adults with stroke in their neurological conditions category, which is also outside of the protocol population.

Study	Reason for exclusion
Fleming, Jennifer, Ownsworth, Tamara, Doig, Emmah et al. (2022) Efficacy of Prospective Memory Rehabilitation Plus Metacognitive Skills Training for Adults With Traumatic Brain Injury: A Randomized Controlled Trial. Neurorehabilitation and neural repair 36(8): 487-499	- Outcomes No relevant outcomes reported. Reports measures of prospective memory, psychosocial reintegration, self-awareness and level of support needs. Has been included in review G regarding cognitive functioning.
Flood, V M, Bogaardt, H, Lau, T et al. (2019) A multidisciplinary pilot study to trial the feasibility and effect of swallowing exercises and diet among people with amyotrophic lateral sclerosis. Amyotrophic lateral sclerosis and frontotemporal degeneration 20(supplement1): 71-72	- Publication type Conference abstract.
Foster, Erin R; Bedekar, Mayuri; Tickle-Degnen, Linda (2014) Systematic review of the effectiveness of occupational therapy-related interventions for people with Parkinson's disease. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 68(1): 39-49	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Foster, Erin R, Carson, Lisa G, Archer, Jamie et al. (2021) Occupational Therapy Interventions for Instrumental Activities of Daily Living for Adults With Parkinson's Disease: A Systematic Review. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 75(3)	- Country Systematic review with 5/22 of the included studies conducted in the UK, 2/22 in Belgium, 2/22 in the Netherlands, 1/22 in Australia, 1/22 in Germany, 1/22 in Spain, 7/22 in the US, 1/22 in Argentina, 1/22 in Brazil, and 1/22 in Japan. UK, Belgian, Dutch, Australian, German and Spanish studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Foster, Erin R; McDaniel, Mark A; Rendell, Peter G (2017) Improving Prospective Memory in Persons With Parkinson Disease: A Randomized Controlled Trial. Neurorehabilitation and neural repair 31(5): 451-461	- Country Study conducted in the US.
Frye, S.K. and Geigle, P.R. (2021) A comparison of prefabricated and custom made resting hand splints for individuals with cervical spinal cord injury: A randomized controlled trial. Clinical rehabilitation 35(6): 861-869	- Country Study conducted in the US.
Gadenz, Camila Dalbosco, Moreira, Tais de Campos, Capobianco, Dirce Maria et al. (2015) Effects of Repetitive Transcranial Magnetic Stimulation in the Rehabilitation of Communication and Deglutition Disorders: Systematic Review of Randomized Controlled Trials. Folia phoniatrica et logopaedica : official organ of the International Association of Logopedics and Phoniatrics (IALP) 67(2): 97-105	- Publication date 3/9 studies published 2013 onwards, and 6/9 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Gandhi, Pooja and Steele, Catriona M (2022) Effectiveness of Interventions for Dysphagia in Parkinson Disease: A Systematic Review. American journal of speech-language pathology 31(1): 463-485	- Publication date 14/26 studies published 2013 onwards, and 12/26 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.

Study	Reason for exclusion
Gandolfi, Marialuisa, Geroin, Christian, Dimitrova, Eleonora et al. (2017) Virtual Reality Telerehabilitation for Postural Instability in Parkinson's Disease: A Multicenter, Single-Blind, Randomized, Controlled Trial. BioMed research international 2017: 7962826	- Intervention Home-based virtual reality balance training programme. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
Gandolla, Marta, Antonietti, Alberto, Longatelli, Valeria et al. (2019) The Effectiveness of Wearable Upper Limb Assistive Devices in Degenerative Neuromuscular Diseases: A Systematic Review and Meta-Analysis. Frontiers in bioengineering and biotechnology 7: 450	- Study design (adults) Systematic review with 13/14 non-randomised studies and 1/14 cross-sectional study. No studies checked against protocol criteria as did not include any randomised controlled trials or systematic reviews.
Garcia-Bustillo, Alvaro, Valinas-Sieiro, Florita, Allende-Rio, Marta et al. (2022) Assistive Devices for Personal Mobility in Parkinson's Disease: A Systematic Review of the Literature. Movement disorders clinical practice 9(8): 1040-1046	- Outcomes Systematic review reporting no relevant outcomes. Reports measures of gait parameters, freezing of gait, and reduction in falls. Studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Gartell, Rebecca; Morris, John; Wallace, Tracey (2023) Feasibility of Using a Mobile App Supported Executive Function Intervention in Military Service Members and Veterans with mTBI and Co-Occurring Psychological Conditions. International journal of environmental research and public health 20(3)	- Country Study conducted in the US.
Gatti, Roberto, Tettamanti, Andrea, Lambiase, Simone et al. (2015) Improving hand functional use in subjects with multiple sclerosis using a musical keyboard: a randomized controlled trial. Physiotherapy research international : the journal for researchers and clinicians in physical therapy 20(2): 100-7	- Outcomes No relevant outcomes reported. Reports measures of hand function, dexterity and strength.
Gelauff, Jeannette M, Rosmalen, Judith G M, Carson, Alan et al. (2020) Internet-based self-help randomized trial for motor functional neurologic disorder (SHIFT). Neurology 95(13): e1883-e1896	- Intervention Educational website with self-help elements and not an intervention for personal activities of daily living, extended activities of daily living, or community living skills..
Gomes Jr, CAR, Andriolo, RB, Bennett, C et al. (2015) Percutaneous endoscopic gastrostomy versus nasogastric tube feeding for adults with swallowing disturbances. Cochrane Database of Systematic Reviews	- Publication date Systematic review with 1/11 studies published 2013 onwards, and 10/11 published pre-2013. Study published 2013 onwards was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Goodwin, Rachel A, Lincoln, Nadina B, das Nair, Roshan et al. (2020) Evaluation of NeuroPage as a memory aid for people with multiple sclerosis: A randomised controlled trial. Neuropsychological rehabilitation 30(1): 15-31	- Study design (adults) Crossover randomised controlled trial with outcome data not presented at the end of the first intervention period.
Gorman, P.H., Forrest, G.F., Asselin, P.K. et al. (2021) The effect of exoskeletal-assisted walking on spinal cord injury bowel function: Results from a randomized trial and comparison	- Country Study conducted in the US.

Study	Reason for exclusion
to other physical interventions. Journal of Clinical Medicine 10(5): 1-11	
Gosa, M.M., Carden, H.T., Jacks, C.C. et al. (2017) Evidence to support treatment options for children with swallowing and feeding disorders: A systematic review. Journal of Pediatric Rehabilitation Medicine 10(2): 107-136	- Publication date Systematic review with 8/61 studies published 2013 onwards, and 53/61 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Goyaghaj, N.S., Pishgooie, A.H., Aliyari, S. et al. (2019) The effect of self-care program training on self-efficacy in veteran with spinal cord injury: A randomized clinical trial study. Archives of Neuroscience 6(3): e89001	- Country Study conducted in Iran.
Gryfe, Pearl; Sexton, Andrew; McGibbon, Chris A (2022) Using gait robotics to improve symptoms of Parkinson's disease: an open-label, pilot randomized controlled trial. European journal of physical and rehabilitation medicine 58(5): 723-737	- Intervention Aerobic, strength and mobility exercise with and without robotic exoskeleton. Mobility aspect does include a functional mobility component, but exercises only form 4/15 (26.7%) of the total intervention and are not focused on personal or extended activities of daily living. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
Hagelskjaer, V., Nielsen, K.T., von Bulow, C. et al. (2021) Occupational therapy addressing the ability to perform activities of daily living among persons living with chronic conditions: a randomised controlled pilot study of ABLE 2.0. Pilot and Feasibility Studies 7(1): 122	- Population Mix of participants in (6/13 people with chronic neurological disorders) and out (7/103 people with chronic respiratory, cardiovascular and musculoskeletal disorders) of protocol. Results not presented separately for target population.
Hardy, Kristina K, Willard, Victoria W, Allen, Taryn M et al. (2013) Working memory training in survivors of pediatric cancer: a randomized pilot study. Psycho-oncology 22(8): 1856-65	- Country Study conducted in the US.
Harrison, Stephanie L, Laver, Kate E, Ninnis, Kayla et al. (2019) Effectiveness of external cues to facilitate task performance in people with neurological disorders: a systematic review and meta-analysis. Disability and rehabilitation 41(16): 1874-1881	- Publication date Systematic review with 13/26 studies published 2013 onwards, and 13/26 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Harvey, Lisa A, Dunlop, Sarah A, Churilov, Leonid et al. (2017) Early intensive hand rehabilitation is not more effective than usual care plus one-to-one hand therapy in people with subacute spinal cord injury ('Hands On'): a randomised trial. Journal of physiotherapy 63(4): 197-204	- Intervention Task-specific hand-training programme with functional electrical stimulation for upper limb functioning and not dynamic splints For upper limb functioning. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
Hashemi, Yazdan, Taghizadeh, Ghorban, Azad, Akram et al. (2022) The effects of supervised and non-supervised upper limb virtual reality exercises on upper limb sensory-motor functions in patients with idiopathic Parkinson's	- Country Study conducted in Iran.

Study	Reason for exclusion
disease. Human movement science 85: 102977	
Hayes, Stephen Clive, James Wilcox, Christopher Richard, Forbes White, Hollie Samantha et al. (2018) The effects of robot assisted gait training on temporal-spatial characteristics of people with spinal cord injuries: A systematic review. The journal of spinal cord medicine 41(5): 529-543	- Country Systematic review with 3/12 of the included studies conducted in Spain, 1/12 in Switzerland, 6/12 in the US, and 2/12 in Iran. Spanish and Swiss studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Heldman, Dustin A, Harris, Denzil A, Felong, Timothy et al. (2017) Telehealth Management of Parkinson's Disease Using Wearable Sensors: An Exploratory Study. Digital biomarkers 1(1): 43-51	- Country Study conducted in the US.
Hemmati Maslakpak, Masomeh and Raiesi, Zahra (2014) Effect of a self-management and follow-up program on self-efficacy in patients with multiple sclerosis: a randomized clinical trial. Nursing and midwifery studies 3(4): e25661	- Country Study conducted in Iran.
Heutinck, Lotte, Jansen, Merel, van den Elzen, Yolanda et al. (2018) Virtual Reality Computer Gaming with Dynamic Arm Support in Boys with Duchenne Muscular Dystrophy. Journal of neuromuscular diseases 5(3): 359-372	- Intervention Virtual reality computer gaming with dynamic arm support for upper limb functioning and not dynamic splints for upper limb functioning.
Hill, M.; Hughes, T.; Milford, C. (2014) Treatment for swallowing difficulties (dysphagia) in chronic muscle disease. Cochrane Database of Systematic Reviews 2014(8): cd004303	- Paper unavailable Review withdrawn from publication.
Ho, Jocelyn Sze-Wing, Ko, Koko Shaau-Yiu, Law, Sheung Wai et al. (2023) The effectiveness of robotic-assisted upper limb rehabilitation to improve upper limb function in patients with cervical spinal cord injuries: a systematic literature review. Frontiers in neurology 14: 1126755	- Study design (adults) Systematic review with 1/7 randomised controlled trials, 4/7 case series, 2/7 non-randomised controlled trials. Randomised controlled trial was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Hoffman, Jeanne M, Garbaccio, Chris, Tyman, Shannon et al. (2023) SCI Thrive: Impact of a peer-led online self-management program. The journal of spinal cord medicine: 1-10	- Country Study conducted in the US.
Hu, Xiaomin, Lu, Jiachun, Wang, Yunyun et al. (2023) Effects of a lower limb walking exoskeleton on quality of life and activities of daily living in patients with complete spinal cord injury: A randomized controlled trial. Technology and health care : official journal of the European Society for Engineering and Medicine	- Country Study conducted in China.
Huang, Qiuchen, Yu, Lili, Gu, Rui et al. (2015) Effects of robot training on bowel function in patients with spinal cord injury. Journal of physical therapy science 27(5): 1377-8	- Country Study conducted in China.
Huang, X., Dong, K., Gan, C. et al. (2023) Effect of Rhythmically Cued Exercise	- Study design (adults) Systematic review with 19/38 randomised controlled trials and 19/38 clinical controlled trials.

Study	Reason for exclusion
Interventions on Functions in Patients with Parkinson Disease: A Meta-Analysis. Physical therapy	Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Hugos, Cinda L, Bourdette, Dennis, Chen, Yiyi et al. (2017) A group-delivered self-management program reduces spasticity in people with multiple sclerosis: A randomized, controlled pilot trial. Multiple sclerosis journal - experimental, translational and clinical 3(1): 2055217317699993	- Country Study conducted in the US.
Humphreys, Ginny, King, Tanya, Jex, Jo et al. (2019) Sleep positioning systems for children and adults with a neurodisability: A systematic review. The British Journal of Occupational Therapy 82(1): 5-14	- Publication date Systematic review with 5/14 studies published 2013 onwards, and 9/14 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Ibitoye, M.O., Hamzaid, N.A., Hayashibe, M. et al. (2019) Restoring prolonged standing via functional electrical stimulation after spinal cord injury: A systematic review of control strategies. Biomedical Signal Processing and Control 49: 34-47	- Publication date Systematic review with 4/25 studies published 2013 onwards, and 21/25 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Isernia, S., Di Tella, S., Pagliari, C. et al. (2020) Effects of an Innovative Telerehabilitation Intervention for People With Parkinson's Disease on Quality of Life, Motor, and Non-motor Abilities. Frontiers in Neurology 11: 846	- Outcomes No relevant outcomes reported. Reports measures of motor functions and cognitive functions. Quality of life measured but only significance and direction of effect reported.
Jaber, Ala'a F; Hartwell, Julie; Radel, Jeff D (2019) Interventions to Address the Needs of Adults With Postconcussion Syndrome: A Systematic Review. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 73(1): 7301205020p1-7301205020p12	- Publication date Systematic review with 5/10 studies published 2013 onwards, and 5/10 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Jacoby, Michele, Averbuch, Sara, Sacher, Yaron et al. (2013) Effectiveness of executive functions training within a virtual supermarket for adults with traumatic brain injury: a pilot study. IEEE transactions on neural systems and rehabilitation engineering : a publication of the IEEE Engineering in Medicine and Biology Society 21(2): 182-90	- Country Study conducted in Israel.
Johansson, Kerstin, Greis, Gunvor, Johansson, Birgit et al. (2013) Evaluation of a new PVC-free catheter material for intermittent catheterization: a prospective, randomized, crossover study. Scandinavian journal of urology 47(1): 33-7	- Population Mixed population including participants in (3/148 people with multiple sclerosis and 2/148 with spinal cord injury) and out (89/148 people with residual urine, 19/148 prostate hyperplasia, 35/148 other non-neurological causes of catheterisation) of protocol. Results not presented separately for target population.
Jonsdottir, J., Bertoni, R., Lawo, M. et al. (2018) Serious games for arm rehabilitation of	- Intervention

Study	Reason for exclusion
persons with multiple sclerosis. A randomized controlled pilot study. Multiple Sclerosis and Related Disorders 19: 25-29	Serious Games-based virtual reality programme for upper limb functioning and not dynamic splints for upper limb functioning.
Jung, Joo Hwan, Lee, Hye Jin, Cho, Duk Youn et al. (2019) Effects of Combined Upper Limb Robotic Therapy in Patients With Tetraplegic Spinal Cord Injury. Annals of rehabilitation medicine 43(4): 445-457	- Country Study conducted in South Korea.
Kamm, Christian P, Mattle, Heinrich P, Muri, Rene M et al. (2015) Home-based training to improve manual dexterity in patients with multiple sclerosis: A randomized controlled trial. Multiple sclerosis (Houndmills, Basingstoke, England) 21(12): 1546-56	- Intervention Dexterity training for upper limb functioning and not dynamic splints for upper limb functioning).
Kapadia, Naaz; Zivanovic, Vera; Popovic, Milos R (2013) Restoring voluntary grasping function in individuals with incomplete chronic spinal cord injury: pilot study. Topics in spinal cord injury rehabilitation 19(4): 279-87	- Outcomes No relevant outcomes reported. Reports measures of functional independence (self-care sub-scale scores only presented) and hand and upper limb functioning. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
Kapadia, Naaz; Zivanovic, Vera; Popovic, Milos R (2013) Restoring voluntary grasping function in individuals with incomplete chronic spinal cord injury: pilot study. Topics in spinal cord injury rehabilitation 19(4): 279-87	- Duplicate
Karimi, Mohammad Taghi (2013) Functional walking ability of paraplegic patients: comparison of functional electrical stimulation versus mechanical orthoses. European journal of orthopaedic surgery & traumatology : orthopedie traumatologie 23(6): 631-8	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Kawashima, N, Hasegawa, K, Iijima, M et al. (2022) Efficacy of Wearable Device Gait Training on Parkinson's Disease: a Randomized Controlled Open-label Pilot Study. Internal medicine (Tokyo, Japan) 61(17): 2573-2580	- Country Study conducted in Japan.
Kern, Victoria, Wicklund, Matthew, Haulman, Anne et al. (2020) Ankle bracing practices in ambulatory, corticosteroid-naive boys with Duchenne muscular dystrophy. Muscle & nerve 61(1): 52-57	- Outcomes No relevant outcomes reported. Reports type of ankle-foot orthosis employed and measures of joint range of motion.
Kesik, G. and Ozdemir, L. (2021) Non-pharmacologic approaches to dysphagia in patients with multiple sclerosis: A systematic review. Turk Noroloji Dergisi 27(2): 111-116	- Country Systematic review with 1/4 of the included studies conducted in Holland, 1/4 in Italy, 1/4 in Iran, and 1/4 in the US. Dutch and Italian studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Kessler, Dorothy and Liddy, Clare (2017) Self-management support programs for persons with Parkinson's disease: An integrative	- Publication date Systematic review with 6/18 studies published 2013 onwards, and 12/18 published pre-2013. Studies published 2013 onwards were checked

Study	Reason for exclusion
review. Patient education and counseling 100(10): 1787-1795	against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Khan, Fary, Amatya, Bhasker, Elmalik, Alaeldin et al. (2016) An enriched environmental programme during inpatient neuro-rehabilitation: A randomized controlled trial. Journal of rehabilitation medicine 48(5): 417-25	- Population Mix of participants in (13/103 people with peripheral neuropathy, 12/103 with multiple sclerosis, 8/103 with brain tumour, 6/103 with Parkinson's disease, and 11/103 'other' neurological condition) and out (53/103 adults with stroke) of protocol. Results not presented separately for target population.
Khedr, Eman M, Mohamed, Khaled O, Soliman, Radwa Kamel et al. (2019) The Effect of High-Frequency Repetitive Transcranial Magnetic Stimulation on Advancing Parkinson's Disease With Dysphagia: Double Blind Randomized Clinical Trial. Neurorehabilitation and neural repair 33(6): 442-452	- Country Study conducted in Egypt.
Khurana, Meetika; Walia, Shefali; Noohu, Majumi M (2017) Study on the Effectiveness of Virtual Reality Game-Based Training on Balance and Functional Performance in Individuals with Paraplegia. Topics in spinal cord injury rehabilitation 23(3): 263-270	- Country Study conducted in India.
Kidd, Tara, Carey, Nicola, Mold, Freda et al. (2017) A systematic review of the effectiveness of self-management interventions in people with multiple sclerosis at improving depression, anxiety and quality of life. PloS one 12(10): e0185931	- Intervention Systematic review including self-management interventions to improve wellbeing of participants and not for community living skills. No studies checked against protocol criteria as did not include studies with the aim of improving or maintaining independence in activities of daily living.
Kim, Heejae, Kim, Eunkyung, Yun, Seo Jung et al. (2022) Robot-assisted gait training with auditory and visual cues in Parkinson's disease: A randomized controlled trial. Annals of physical and rehabilitation medicine 65(3): 101620	- Country Study conducted in South Korea.
Kim, Ja Young and Kim, HyangHee (2023) Effects of behavioural swallowing therapy in patients with Parkinson's disease: A systematic review. International journal of speech-language pathology 25(2): 269-280	- Study design (adults) Systematic review with 4/11 randomised controlled trials and 7/11 non-randomised controlled trials. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Ko, KR, Park, HJ, Hyun, JK et al. (2016) Effect of Laryngopharyngeal Neuromuscular Electrical Stimulation on Dysphonia Accompanied by Dysphagia in Post-stroke and Traumatic Brain Injury Patients: a Pilot Study. Annals of rehabilitation medicine 40(4): 600-610	- Country Study conducted in South Korea.
Kraepelien, Martin, Schibbye, Robert, Mansson, Kristoffer et al. (2020) Individually Tailored Internet-Based Cognitive-Behavioral Therapy for Daily Functioning in Patients with Parkinson's Disease: A Randomized Controlled Trial. Journal of Parkinson's disease 10(2): 653-664	- Intervention Tailored, internet-based cognitive-behavioural therapy aimed at daily functioning. Has been included in review H regarding emotional health and mental wellbeing.

Study	Reason for exclusion
Krasny-Pacini, Agata; Chevignard, Mathilde; Evans, Jonathan (2014) Goal Management Training for rehabilitation of executive functions: a systematic review of effectiveness in patients with acquired brain injury. Disability and rehabilitation 36(2): 105-16	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Kryger, Michael Alan, Crytzer, Theresa M, Fairman, Andrea et al. (2019) The Effect of the Interactive Mobile Health and Rehabilitation System on Health and Psychosocial Outcomes in Spinal Cord Injury: Randomized Controlled Trial. Journal of medical Internet research 21(8): e14305	- Country Study conducted in the US.
Kwon, Sun-Ho; Park, Jae Kyung; Koh, Young Ho (2023) A systematic review and meta-analysis on the effect of virtual reality-based rehabilitation for people with Parkinson's disease. Journal of neuroengineering and rehabilitation 20(1): 94	- Country Systematic review with 3/14 of the included studies conducted in Italy, 1/14 in the Netherlands, 5/14 in Brazil, 3/14 in Taiwan, 1/14 in China, and 1/14 in Pakistan. Italian and Dutch studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Lajeunesse, Veronique, Vincent, Claude, Routhier, Francois et al. (2016) Exoskeletons' design and usefulness evidence according to a systematic review of lower limb exoskeletons used for functional mobility by people with spinal cord injury. Disability and rehabilitation. Assistive technology 11(7): 535-47	- Publication date Systematic review with 4/7 studies published 2013 onwards, and 3/7 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Lannin, Natasha, Carr, Belinda, Allaous, Jeanine et al. (2014) A randomized controlled trial of the effectiveness of handheld computers for improving everyday memory functioning in patients with memory impairments after acquired brain injury. Clinical rehabilitation 28(5): 470-81	- Duplicate
Lauriti, Giuseppe, Lisi, Gabriele, Lelli Chiesa, Pierluigi et al. (2018) Gastroesophageal reflux in children with neurological impairment: a systematic review and meta-analysis. Pediatric surgery international 34(11): 1139-1149	- Publication date Systematic review with 7/21 studies published 2013 onwards, and 14/21 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Lee, JuHee, Yeom, Insun, Chung, Misook L et al. (2022) Use of Mobile Apps for Self-care in People With Parkinson Disease: Systematic Review. JMIR mHealth and uHealth 10(1): e33944	- Study design (adults) Systematic review with 3/17 randomised controlled trials, 12/17 observational studies, and 2/17 non-randomised controlled trials. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Lee, So Young, Park, Donghwi, Jang, Joonyoung et al. (2021) Compensatory Effects of Sequential 4-Channel Neuromuscular Electrical Stimulation for the Treatment of Acute, Subacute, and Chronic Dysphagia in a Prospective, Double-Blinded Randomized Clinical	- Country Study conducted in South Korea.

Study	Reason for exclusion
Trial. Neurorehabilitation and neural repair 35(9): 801-811	
Leopold, Anne, Lourie, Anna, Petras, Hanno et al. (2015) The use of assistive technology for cognition to support the performance of daily activities for individuals with cognitive disabilities due to traumatic brain injury: The current state of the research. NeuroRehabilitation 37(3): 359-78	- Publication date Systematic review with 3/28 studies published 2013 onwards, and 25/28 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Leung, Joan, Harvey, Lisa A, Moseley, Anne M et al. (2014) Standing with electrical stimulation and splinting is no better than standing alone for management of ankle plantarflexion contractures in people with traumatic brain injury: a randomised trial. Journal of physiotherapy 60(4): 201-8	- Outcomes No relevant outcomes reported. Reports measures of ankle range of motion, gait parameters, spasticity, perceived effect of treatment, and perceived treatment credibility. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question. Note: Functional Independence Measure used but only walking sub-scale outcomes reported.
Li, Runze, Zhang, Yanran, Jiang, Yunxia et al. (2021) Rehabilitation training based on virtual reality for patients with Parkinson's disease in improving balance, quality of life, activities of daily living, and depressive symptoms: A systematic review and meta-regression analysis. Clinical rehabilitation 35(8): 1089-1102	- Country Systematic review with 3/22 of the included studies conducted in Italy, 2/22 in Hungary, 1/22 in Australia, 1/22 in the Netherlands, 6/22 in China, 5/22 in Brazil, 3/33 in Taiwan, and 1/22 in South Korea. Italian, Hungarian, Australian, and Dutch studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Liao, Y.-Y., Yang, Y.-R., Cheng, S.-J. et al. (2015) Virtual Reality-Based Training to Improve Obstacle-Crossing Performance and Dynamic Balance in Patients With Parkinson's Disease. Neurorehabilitation and Neural Repair 29(7): 658-667	- Country Study conducted in Taiwan.
Lin, B.-S., Zhang, Z., Peng, C.-W. et al. (2023) Effectiveness of Repetitive Transcranial Magnetic Stimulation Combined with Transspinal Electrical Stimulation on Corticospinal Excitability for Individuals with Incomplete Spinal Cord Injury: A Pilot Study. IEEE Transactions on Neural Systems and Rehabilitation Engineering 31: 4790-4800	- Country Study conducted in Taiwan.
Lina, Chen, Guoen, Cai, Huidan, Weng et al. (2020) The Effect of Virtual Reality on the Ability to Perform Activities of Daily Living, Balance During Gait, and Motor Function in Parkinson Disease Patients: A Systematic Review and Meta-Analysis. American journal of physical medicine & rehabilitation 99(10): 917-924	- Country Systematic review with 2/12 of the included studies conducted in Italy, 5/12 in China, 3/12 in Brazil and 2/12 in South Korea. Italian studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Linares-Del Rey, M; Vela-Desojo, L; Cano-de la Cuerda, R (2019) Mobile phone applications in Parkinson's disease: A systematic review. Neurologia (Barcelona, Spain) 34(1): 38-54	- Population Systematic review including participants in (9/26 people with Parkinson's disease) and out (8/26 healthy adults and people with Parkinson's

Study	Reason for exclusion
	disease, 2/26 healthy adults only, and 1/26 healthcare professionals) of protocol. Results not presented separately for target population. Studies including participants with Parkinson's disease were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened. Note: Papers do not add up to 26 as there were also 6 included that had no participants.
Linden, Mark, Hawley, Carol, Blackwood, Bronagh et al. (2016) Technological aids for the rehabilitation of memory and executive functioning in children and adolescents with acquired brain injury. The Cochrane database of systematic reviews 7: cd011020	- Publication date Systematic review with 1/4 studies published 2013 onwards, and 3/4 published pre-2013. Study published 2013 onwards was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Lindsay, Sally, Kingsnorth, Shauna, Mcdougall, Carolyn et al. (2014) A systematic review of self-management interventions for children and youth with physical disabilities. Disability and rehabilitation 36(4): 276-88	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Liu, Hsin-Hsuan, Wang, Ray-Yau, Cheng, Shih-Jung et al. (2022) Effects of square-stepping exercise on executive function in individuals with Parkinson's disease: A randomized controlled pilot study. Geriatric nursing (New York, N.Y.) 47: 273-279	- Country Study conducted in Taiwan.
Liu, X., Chen, F., Chu, J. et al. (2018) Effects of nape acupuncture combined with swallowing rehabilitation on dysphagia in pseudobulbar palsy. Journal of Traditional Chinese Medicine 38(1): 117-124	- Country Study conducted in China.
Livingston, Michael H, Shawyer, Anna C, Rosenbaum, Peter L et al. (2015) Fundoplication and gastrostomy versus percutaneous gastrojejunostomy for gastroesophageal reflux in children with neurologic impairment: A systematic review and meta-analysis. Journal of pediatric surgery 50(5): 707-14	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Longatelli, Valeria, Antonietti, Alberto, Biffi, Emilia et al. (2021) User-centred assistive SystEm for arm Functions in neUromuscuLar subjects (USEFUL): a randomized controlled study. Journal of neuroengineering and rehabilitation 18(1): 4	- Intervention Passive and semi-active body-powered antigravity exoskeletons for upper limb functioning and not gait exoskeletons or dynamic splints for upper limb functioning. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
Lopez-Liria, Remedios, Parra-Egeda, Jennifer, Vega-Ramirez, Francisco A et al. (2020) Treatment of Dysphagia in Parkinson's Disease: A Systematic Review. International journal of environmental research and public health 17(11)	- Publication date Systematic review with 4/11 studies published 2013 onwards, and 7/11 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.

Study	Reason for exclusion
Lotter, Jennifer K, Henderson, Christopher E, Plawecki, Abbey et al. (2020) Task-Specific Versus Impairment-Based Training on Locomotor Performance in Individuals With Chronic Spinal Cord Injury: A Randomized Crossover Study. Neurorehabilitation and neural repair 34(7): 627-639	- Country Study conducted in the US.
Lozano-Berrio, V., Alcobendas-Maestro, M., Polonio-Lopez, B. et al. (2022) The Impact of Robotic Therapy on the Self-Perception of Upper Limb Function in Cervical Spinal Cord Injury: A Pilot Randomized Controlled Trial. International Journal of Environmental Research and Public Health 19(10): 6321	- Intervention Robotic therapy for upper limb function and not dynamic splints for upper limb functioning. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
Lu, Tsung-Chien, Fu, Chia-Ming, Ma, Matthew Huei-Ming et al. (2016) Healthcare Applications of Smart Watches. A Systematic Review. Applied clinical informatics 7(3): 850-69	- Publication type Systematic review with 7/24 journal articles, 13/24 conference proceedings, 2/24 conference papers, and 2/24 published protocols for ongoing trials. Journal articles were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Lukersmith, Sue; Radbron, Lesley; Hopman, Katherine (2013) Development of clinical guidelines for the prescription of a seated wheelchair or mobility scooter for people with traumatic brain injury or spinal cord injury. Australian occupational therapy journal 60(6): 378-86	- Publication type Description of guideline development process. Note: Systematic review methods described but results are not presented.
Lynch, Colleen and LaGasse, A Blythe (2016) Training Endogenous Task Shifting Using Music Therapy: A Feasibility Study. Journal of music therapy 53(3): 279-307	- Country Study conducted in the US.
Maggio, Maria Grazia, Cannavo, Antonino, Quartarone, Angelo et al. (2023) Enhancing the Quality of Life of Patients with Multiple Sclerosis: Promising Results on the Role of Cognitive Tele-Rehabilitation Plus Virtual Reality. Brain sciences 13(12)	- Outcomes No relevant outcomes reported. Reports measures of quality of life (mental sub-scale scores only presented).
Manor, Yael, Mootanah, Rajshree, Freud, Debora et al. (2013) Video-assisted swallowing therapy for patients with Parkinson's disease. Parkinsonism & related disorders 19(2): 207-11	- Country Study conducted in Israel.
Marcos-Anton, Selena, Jardon-Huete, Alberto, Ona-Simbana, Edwin Daniel et al. (2023) sEMG-controlled forearm bracelet and serious game-based rehabilitation for training manual dexterity in people with multiple sclerosis: a randomised controlled trial. Journal of neuroengineering and rehabilitation 20(1): 110	- Intervention Motion capture system plus serious games for upper limb functioning and not dynamic splints for upper limb functioning.
Martin, Tara, Weatherall, Mark, Anderson, Tim J et al. (2015) A Randomized Controlled Feasibility Trial of a Specific Cueing Program for Falls Management in Persons With Parkinson	- Outcomes No relevant outcomes reported. Reports measures of freezing of gait and falls.

Study	Reason for exclusion
Disease and Freezing of Gait. Journal of neurologic physical therapy : JNPT 39(3): 179-84	
McClurg, Doreen, Harris, Fiona, Goodman, Kirsteen et al. (2018) Abdominal massage plus advice, compared with advice only, for neurogenic bowel dysfunction in MS: a RCT. Health technology assessment (Winchester, England) 22(58): 1-134	- Intervention Abdominal massage and advice to optimise bowel care.
McDaid, Catriona, Fayter, Debra, Booth, Alison et al. (2017) Systematic review of the evidence on orthotic devices for the management of knee instability related to neuromuscular and central nervous system disorders. BMJ open 7(9): e015927	- Study design (adults) Systematic review with 2/21 randomised controlled trials, 16/21 case series, 2/21 non-randomised controlled trials, and 1/21 cohort study. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
McDermott, M.S. and While, A.E. (2013) Maximizing the healthcare environment: A systematic review exploring the potential of computer technology to promote self-management of chronic illness in healthcare settings. Patient Education and Counseling 92(1): 13-22	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
McGibbon, Chris A, Sexton, Andrew, Jayaraman, Arun et al. (2018) Evaluation of the Keeogo exoskeleton for assisting ambulatory activities in people with multiple sclerosis: an open-label, randomized, cross-over trial. Journal of neuroengineering and rehabilitation 15(1): 117	- Outcomes No relevant outcomes reported. Reports timed function tests, and measures of physical activity and extent of use. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
McGibbon, Chris, Sexton, Andrew, Gryfe, Pearl et al. (2023) Effect of using of a lower-extremity exoskeleton on disability of people with multiple sclerosis. Disability and rehabilitation. Assistive technology 18(5): 475-482	- Study design (adults) No comparator group, not a randomised controlled trial
McIntyre, Amanda, Cheung, Kung Yan, Kwok, Cecilia et al. (2014) Quality of life and bladder management post spinal cord injury: A systematic review. Applied Research in Quality of Life 9(4): 1081-1096	- Publication date Systematic review with 1/7 studies published 2013 onwards, and 6/7 published pre-2013. Study published 2013 onwards was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Miller Renfrew, Linda, Lord, Anna C, Warren, Jake et al. (2019) Evaluating the Effect of Functional Electrical Stimulation Used for Foot Drop on Aspects of Health-Related Quality of Life in People with Multiple Sclerosis: A Systematic Review. International journal of MS care 21(4): 173-182	- Study design (adults) Systematic review with 2/8 randomised controlled trials, 3/8 observational studies, and 3/8 non-randomised trials. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Miller, Kimberly J, Adair, Brooke S, Pearce, Alan J et al. (2014) Effectiveness and feasibility of virtual reality and gaming system use at home by older adults for enabling physical activity to improve health-related domains: a systematic review. Age and ageing 43(2): 188-95	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.

Study	Reason for exclusion
Momosaki, Ryo, Kinoshita, Shoji, Kakuda, Wataru et al. (2016) Noninvasive brain stimulation for dysphagia after acquired brain injury: a systematic review. The journal of medical investigation : JMI 63(34): 153-8	- Publication date Systematic review with 3/8 studies published 2013 onwards, and 5/8 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Monticone, M., Ambrosini, E., Laurini, A. et al. (2015) In-patient multidisciplinary rehabilitation for Parkinson's disease: A randomized controlled trial. Movement Disorders 30(8): 1050-1058	- Intervention Inpatient multidisciplinary rehabilitation including motor training, cognitive training, and ergonomic education.
Morone, Giovanni, de Sire, Alessandro, Martino Cinnera, Alex et al. (2021) Upper Limb Robotic Rehabilitation for Patients with Cervical Spinal Cord Injury: A Comprehensive Review. Brain sciences 11(12)	- Country Systematic review with 2/11 of the included studies conducted in Canada, 1/11 in the Netherlands, 1/11 in the UK, 5/11 in the US, and 2/11 in South Korea. Canadian, Dutch and UK studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Mortimer, Duncan, Trevena-Peters, Jessica, McKay, Adam et al. (2019) Economic Evaluation of Activities of Daily Living Retraining During Posttraumatic Amnesia for Inpatient Rehabilitation Following Severe Traumatic Brain Injury. Archives of physical medicine and rehabilitation 100(4): 648-655	- Population Participants' condition does not meet the guideline definition of chronic (3 months since diagnosis or injury). Time since injury not reported but mean time to rehabilitation was 16.46 (standard deviation 10.52) days.
Nam, Ji-Hye and Kim, Hee (2018) How assistive devices affect activities of daily living and cognitive functions of people with brain injury: a meta-analysis. Disability and rehabilitation. Assistive technology 13(3): 305-311	- Population Systematic review including participants in (3/8 people with acquired brain injury) and out (5/8 adults with stroke) of protocol. Results not presented separately for target population. Studies involving people with acquired brain injury were checked against protocol criteria – 1 was identified as potentially relevant and retrieved for further screening.
Nascimento, Andreia Santos, Fagundes, Cindy Vieira, Mendes, Felipe Augusto Dos Santos et al. (2021) Effectiveness of Virtual Reality Rehabilitation in Persons with Multiple Sclerosis: A Systematic Review and Meta-analysis of Randomized Controlled Trials. Multiple sclerosis and related disorders 54: 103128	- Country Systematic review with 1/9 of the included studies conducted in Hungary, 1/9 in Italy, 1/9 in Spain, 1/9 in Sweden, 1/9 in the UK, 2/9 in Turkey, 1/9 in Iran, and 1/9 in Jordan. Hungarian, Italian, Spanish and UK studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Nguyen, Hoai Son and Luu, Trieu Phat (2021) Tremor-Suppression Orthoses for the Upper Limb: Current Developments and Future Challenges. Frontiers in human neuroscience 15: 622535	- Country Systematic review with 4/19 of the included studies conducted in Canada, 2/19 in the UK, 1/19 in Spain, 1/19 in Switzerland, 5/19 in the US, 3/19 in Japan, 2/19 in China, and 1/19 in Israel. Canadian, UK, Spanish, and Swiss studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.

Study	Reason for exclusion
O'Connor, Joanne, McCaughan, Dorothy, McDaid, Catriona et al. (2016) Orthotic management of instability of the knee related to neuromuscular and central nervous system disorders: systematic review, qualitative study, survey and costing analysis. Health technology assessment (Winchester, England) 20(55): 1-262	- Publication date Systematic review with 2/21 studies published 2013 onwards, and 19/21 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
O'Neill, B, Best, C, O'Neill, L et al. (2016) A randomized control trial of an assistive technology for cognition to support activities of daily living after brain injury. Brain injury 24(3): 115-463	- Publication type Conference abstract.
O'Neill, Brian, Best, Catherine, O'Neill, Lauren et al. (2018) Efficacy of a Micro-Prompting Technology in Reducing Support Needed by People With Severe Acquired Brain Injury in Activities of Daily Living: A Randomized Control Trial. The Journal of head trauma rehabilitation 33(5): e33-e41	- Outcomes No relevant outcomes reported. Reports measures of support worker interventions.
Okemuo, A.J.; Gallagher, D.; Dairo, Y.M. (2023) Effects of rebound exercises on balance and mobility of people with neurological disorders: A systematic review. PLoS ONE 18(10october): e0292312	- Country Systematic review with 1/5 of the included studies conducted in Germany, 1/5 in South Korea, and 3/5 in Iran. German studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Olivares, A., Comini, L., Orfano, J. et al. (2019) Occupational therapy with Nordic walking and therapeutic touch: A pilot study for multidisciplinary rehabilitation in Parkinson's disease. NeuroRehabilitation 45(1): 125-134	- Study design (adults) Crossover randomised controlled trial with outcome data not presented at the end of the first intervention period.
Ownsworth, Tamara, Mitchell, Jessie, Griffin, Janelle et al. (2023) Electronic Assistive Technology to Support Memory Function After Traumatic Brain Injury: A Systematic Review of Efficacy and User Perspectives. Journal of neurotrauma 40(1516): 1533-1556	- Publication date Systematic review with 6/19 studies published 2013 onwards, and 13/19 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Ozden, Fatih (2023) The effect of mobile application-based rehabilitation in patients with Parkinson's disease: A systematic review and meta-analysis. Clinical neurology and neurosurgery 225: 107579	- Intervention Systematic review with mix of interventions in (1/5 smart device-assisted daily planning programme) and out (3/5 smart device-assisted exercise programmes and 1/5 smart device assisted symptom-tracking) of protocol. Studies investigating device-assisted daily planning were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Ozkul, Cagla, Guclu-Gunduz, Arzu, Eldemir, Kader et al. (2020) Effect of task-oriented circuit training on motor and cognitive performance in patients with multiple sclerosis: A single-blinded randomized controlled trial. NeuroRehabilitation 46(3): 343-353	- Country Study conducted in Turkey.

Study	Reason for exclusion
Park, Ji-Su, Oh, Dong-Hwan, Hwang, Na-Kyoung et al. (2018) Effects of neuromuscular electrical stimulation in patients with Parkinson's disease and dysphagia: A randomized, single-blind, placebo-controlled trial. NeuroRehabilitation 42(4): 457-463	- Country Study conducted in South Korea.
Park, Yusun, Kim, Sung Reul, So, Hui Young et al. (2022) Effect of mobile health intervention for self-management on self-efficacy, motor and non-motor symptoms, self-management, and quality of life in people with Parkinson's disease: Randomized controlled trial. Geriatric nursing (New York, N.Y.) 46: 90-97	- Country Study conducted in South Korea.
Pazzaglia, C, Imbimbo, I, Tranchita, E et al. (2020) Comparison of virtual reality rehabilitation and conventional rehabilitation in Parkinson's disease: a randomised controlled trial. Physiotherapy 106: 36-42	- Intervention Virtual reality rehabilitation programme.
Peacock, Dakota, Yoneda, Joshua, Thomson, Vanessa et al. (2021) Tailoring the use of wearable systems and telehealth for Parkinson's disease. Parkinsonism & related disorders 89: 111-112	- Publication type Journal correspondence.
Pedlow, Katy, McDonough, Suzanne, Lennon, Sheila et al. (2019) Assisted standing for Duchenne muscular dystrophy. The Cochrane database of systematic reviews 10: cd011550	- Other protocol criteria Systematic review with no included studies.
Perju-Dumbrava, Lacramioara, Barsan, Maria, Leucuta, Daniel Corneliu et al. (2022) Artificial intelligence applications and robotic systems in Parkinson's disease (Review). Experimental and therapeutic medicine 23(2): 153	- Study design (adults) Systematic review with 4/21 randomised controlled trials, 7/21 observational studies, 4/21 non-controlled studies, 4/21 non-randomised studies, and 1/21 case studies. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Perpetuini, David, Russo, Emanuele Francesco, Cardone, Daniela et al. (2023) Use and Effectiveness of Electrosuit in Neurological Disorders: A Systematic Review with Clinical Implications. Bioengineering (Basel, Switzerland) 10(6)	- Population Systematic review including participants in (1/12 people with Parkinson's disease and fibromyalgia) and out (6/12 people with cerebral palsy, 2/12 adults with stroke, 2/12 people with cerebral palsy and adults with stroke, and 1/12 people with fibromyalgia. Results not presented separately for target population. Study involving people with Parkinson’s disease was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Perri-Moore, S., Kapsandoy, S., Doyon, K. et al. (2016) Automated alerts and reminders targeting patients: A review of the literature. Patient Education and Counseling 99(6): 953-959	- Publication date Systematic review with 1/51 studies published 2013 onwards, and 50/51 published pre-2013. Study published 2013 onwards was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.

Study	Reason for exclusion
Perry, S I B, Nelissen, P M, Siemonsma, P et al. (2019) The effect of functional-task training on activities of daily living for people with Parkinson`s disease, a systematic review with meta-analysis. Complementary therapies in medicine 42: 312-321	- Publication date Systematic review with 5/10 studies published 2013 onwards, and 5/10 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Pickenbrock, Heidrun M; Zapf, Antonia; Dressler, Dirk (2015) Effects of therapeutic positioning on vital parameters in patients with central neurological disorders: a randomised controlled trial. Journal of clinical nursing 24(2324): 3681-90	- Population Mix of participants in (28/218 people with hypoxic brain injury, 20/218 with traumatic brain injury, and 29/218 'other' central neurological disease) and out (141/218 adults with stroke) of protocol. Results not presented separately for target population.
Pickenbrock, Heidrun, Ludwig, Vera U, Zapf, Antonia et al. (2015) Conventional versus neutral positioning in central neurological disease: a multicenter randomized controlled trial. Deutsches Arzteblatt international 112(3): 35-42	- Population Mix of participants in (28/218 people with hypoxic brain injury, 20/218 with traumatic brain injury, and 29/218 'other' central neurological disease) and out (141/218 adults with stroke) of protocol. Results not presented separately for target population.
Pietrzak, Eva; Pullman, Stephen; McGuire, Annabel (2014) Using Virtual Reality and Videogames for Traumatic Brain Injury Rehabilitation: A Structured Literature Review. Games for health journal 3(4): 202-14	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Pigott, Jennifer S, Kane, Edward J, Ambler, Gareth et al. (2022) Systematic review and meta-analysis of clinical effectiveness of self-management interventions in Parkinson's disease. BMC geriatrics 22(1): 45	- Study design (adults) Systematic review with 19/36 randomised controlled trials, 12/36 non-controlled trials, and 5/36 non-randomised controlled trials. Randomised controlled trials were checked against protocol criteria – 1 was identified as potentially relevant and retrieved for further screening.
Piovesana, Adina, Ross, Stephanie, Lloyd, Owen et al. (2017) A randomised controlled trial of a web-based multi-modal therapy program to improve executive functioning in children and adolescents with acquired brain injury. Clinical rehabilitation 31(10): 1351-1363	- Outcomes No relevant outcomes reported. Reports measures of executive functioning. Has been included in review G regarding cognitive functioning.
Plaza, Exequiel and Ruviaro Busanello-Stella, Angela (2022) Effects of a tongue training program in Parkinson's disease: Analysis of electrical activity and strength of suprahyoid muscles. Journal of electromyography and kinesiology : official journal of the International Society of Electrophysiological Kinesiology 63: 102642	- Country Study conducted in Chile.
Plowman, Emily K, Tabor-Gray, Lauren, Rosado, K Michelle et al. (2019) Impact of expiratory strength training in amyotrophic lateral sclerosis: Results of a randomized, sham-controlled trial. Muscle & nerve 59(1): 40-46	- Country Study conducted in the US.
Pok-Ja, Oh and Jung Ran, Lee (2022) Development and Effects of a Mobile Application-based Self-Management Program for Chemotherapy-induced Peripheral Neuropathy in	- Country Study conducted in South Korea.

Study	Reason for exclusion
Colorectal Cancer Patients. Korean journal of adult nursing 34(3): 258-268	
Postol, Nicola, Marquez, Jodie, Spartalis, Stephanie et al. (2019) Do powered over-ground lower limb robotic exoskeletons affect outcomes in the rehabilitation of people with acquired brain injury?. Disability and rehabilitation. Assistive technology 14(8): 764-775	- Country Systematic review with 7/13 of the included studies conducted in Japan, 5/13 in the US, and 1/13 in China. No studies checked against protocol criteria as did not include any studies from target countries.
Pouplin, Samuel, Bensmail, Djamel, Vaugier, Isabelle et al. (2019) Influence of training protocols on text input speed on a computer in individuals with cervical spinal cord injury: a randomised controlled trial. Spinal cord 57(8): 636-643	- Intervention Guided and self-directed training for a word prediction software.
Powell, Janet M; Rich, Timothy J; Wise, Elizabeth K (2016) Effectiveness of Occupation- and Activity-Based Interventions to Improve Everyday Activities and Social Participation for People With Traumatic Brain Injury: A Systematic Review. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 70(3): 7003180040p1-9	- Publication date Systematic review with 1/19 studies published 2013 onwards, and 18/19 published pre-2013. Study published 2013 onwards was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Prokopiusova, Terezie, Pavlikova, Marketa, Markova, Magdalena et al. (2020) Randomized comparison of functional electric stimulation in posturally corrected position and motor program activating therapy: treating foot drop in people with multiple sclerosis. European journal of physical and rehabilitation medicine 56(4): 394-402	- Comparator Neuroproprioceptive facilitation and inhibition physiotherapy (a type of motor program activating therapy) and not an intervention of the same group, placebo, standard rehabilitation, or usual care.
Propp, Roni, Gill, Peter J, Marcus, Sherna et al. (2022) Neuromuscular electrical stimulation for children with dysphagia: a systematic review. BMJ open 12(3): e055124	- Country Systematic review with 1/10 of the included studies conducted in Canada, 3/10 in the US, 2/10 in China, 2/10 in South Korea, 1/10 in Egypt, and 1/10 in Turkey. Canadian study was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Qin, Yan, Liu, Maoxia, Guo, Fengbao et al. (2023) The Efficacy of Parenteral Nutrition and Enteral Nutrition Supports in Traumatic Brain Injury: A Systemic Review and Network Meta-Analysis. Emergency medicine international 2023: 8867614	- Country Systematic review with 1/7 of the included studies conducted in Italy, 2/7 in the US, 2/7 in China, 1/7 in Brazil, and 1/7 in Iran. Italian study was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Raciti, Loredana, Pignolo, Loris, Perini, Valentina et al. (2022) Improving Upper Extremity Bradykinesia in Parkinson's Disease: A Randomized Clinical Trial on the Use of Gravity-Supporting Exoskeletons. Journal of clinical medicine 11(9)	- Intervention Upper limb robotic exoskeleton and not robotic gait orthosis or gait exoskeleton.
Radomski, M.V., Anheluk, M., Bartzen, M.P. et al. (2016) Effectiveness of Interventions to Address Cognitive Impairments and Improve Occupational Performance After Traumatic Brain	- Publication date Systematic review with 3/37 studies published 2013 onwards, and 34/37 published pre-2013.

Study	Reason for exclusion
Injury: A Systematic Review. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 70(3): p1-p9	Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Raina, Ketki D, Morse, Jennifer Q, Chisholm, Denise et al. (2022) An Internet-Based Self-Management Intervention to Reduce Fatigue Among People With Traumatic Brain Injury: A Pilot Randomized Controlled Trial. The American journal of occupational therapy : official publication of the American Occupational Therapy Association 76(4)	- Country Study conducted in the US.
Rajan, Roopa, Garg, Kanwaljeet, Srivastava, Achal K et al. (2022) Device-Assisted and Neuromodulatory Therapies for Parkinson's Disease: A Network Meta-Analysis. Movement disorders : official journal of the Movement Disorder Society 37(9): 1785-1797	- Publication date Systematic review with 6/26 studies published 2013 onwards, and 20/26 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Ramirez-Hernandez, Diana, Wong, Dana, Ownsworth, Tamara et al. (2023) Which training methods are effective for learning new smartphone memory apps after acquired brain injury? A pilot randomized controlled trial comparing trial and error, systematic instruction and error-based learning. Neuropsychological rehabilitation 33(1): 139-172	- Outcomes No relevant outcomes reported. Reports measures of proficiency with intervention smartphone app, confidence with other smartphone apps, and memory.
Raskin, S.A., Smith, M.P., Mills, G. et al. (2019) Prospective memory intervention using visual imagery in individuals with brain injury. Neuropsychological rehabilitation 29(2): 289-304	- Country Study conducted in the US.
Raso, Maria Girolama, Arcuri, Francesco, Liperoti, Stefano et al. (2021) Telemonitoring of Patients With Chronic Traumatic Brain Injury: A Pilot Study. Frontiers in neurology 12: 598777	- Outcomes No relevant outcomes reported. Reports measures of cognitive functioning, adverse events and healthcare costs.
Restivo, Domenico A, Alfonsi, Enrico, Casabona, Antonino et al. (2019) A pilot study on the efficacy of transcranial direct current stimulation applied to the pharyngeal motor cortex for dysphagia associated with brainstem involvement in multiple sclerosis. Clinical neurophysiology : official journal of the International Federation of Clinical Neurophysiology 130(6): 1017-1024	- Outcomes No relevant outcomes reported. Reports measures of radiological and electromyographic assessment of swallowing.
Restivo, Domenico A, Casabona, Antonino, Centonze, Diego et al. (2013) Pharyngeal electrical stimulation for dysphagia associated with multiple sclerosis: a pilot study. Brain stimulation 6(3): 418-23	- Outcomes No relevant outcomes reported. Reports measures of radiological and electromyographic assessment of swallowing.
Rice, Ian M; Rice, Laura A; Motl, Robert W (2015) Promoting Physical Activity Through a Manual Wheelchair Propulsion Intervention in Persons With Multiple Sclerosis. Archives of physical medicine and rehabilitation 96(10): 1850-8	- Country Study conducted in the US.

Study	Reason for exclusion
Richardson, John S, Fann, Jesse R, Bell, Kathleen R et al. (2018) Impact of Telephone-Based Problem-Solving Treatment on the Use of Medical and Psychological Services in the Military. The Journal of head trauma rehabilitation 33(2): e1-e6	- Country Study conducted in the US.
Rietberg, Marc B, van Wegen, Erwin E H, Eyssen, Isaline C J M et al. (2014) Effects of multidisciplinary rehabilitation on chronic fatigue in multiple sclerosis: a randomized controlled trial. PloS one 9(9): e107710	- Intervention Self-management intervention including an energy conservation component, designed to reduce chronic fatigue. On the basis of the full text, the study seems more directly relevant to review J regarding fatigue management and was further screened for that question.
Rigon, J., Burro, R., Guariglia, C. et al. (2017) Self-awareness rehabilitation after Traumatic Brain Injury: A pilot study to compare two group therapies. Restorative Neurology and Neuroscience 35(1): 115-127	- Outcomes No relevant outcomes reported. Reports measures of self-awareness, spatial and temporal orientation, logical reasoning, attention, memory, language, and executive functioning.
Sabari, Joyce, Stefanov, Dimitre G, Chan, Judy et al. (2019) Adapted feeding utensils for people with Parkinson's-related or essential tremor. American Journal of Occupational Therapy 73(2): 1-9	- Country Study conducted in the US.
Sadeghi, Zahra, Ghoreishi, Zahra S, Flowers, Heather L et al. (2023) Efficacy of mindfulness-based cognitive therapy compared to diet modification alone for dysphagia in persons with multiple sclerosis. Mindfulness 14(1): 91-100	- Country Study conducted in Iran.
Salci, Yeliz, Fil, Ayla, Armutlu, Kadriye et al. (2017) Effects of different exercise modalities on ataxia in multiple sclerosis patients: a randomized controlled study. Disability and rehabilitation 39(26): 2626-2632	- Country Study conducted in Turkey.
Saleem, Shakeela; Miles, Anna; Allen, Jacqueline (2023) A systematic review of behavioural therapies for improving swallow and cough function in Parkinson's disease. International journal of speech-language pathology: 1-18	- Study design (adults) Systematic review with 15/36 randomised controlled trials, 14/36 non-controlled trials, and 7/36 non-randomised controlled trials. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Salle, J.-Y., Tchalla, A., Thirion, R. et al. (2021) Efficacy of a Ready-to-Drink Gelled Water and of a Thickening Powder in Patients with Oropharyngeal Dysphagia: a Crossover Randomized Study. SN Comprehensive Clinical Medicine 3(11): 2244-2250	- Population Mix of participants in (3/30 people with Parkinson's disease, 1/30 with encephalitis, 1/30 genetic atrophy, 1/30 with multiple sclerosis , and 1/30 with progressive supranuclear palsy) and out (20/30 adults with stroke and 3/30 with age-related dysphagia) of protocol. Results not presented separately for target population.
Sawin, Kathleen J, Margolis, Rachel H F, Ridosh, Monique M et al. (2021) Self-management and spina bifida: A systematic review of the literature. Disability and health journal 14(1): 100940	- Study design (adults) Systematic review with 4/56 randomised controlled trials, 41/56 non-experimental studies, 9/56 quasi-experimental studies, and 2/65 feasibility studies. Randomised controlled trials (and non-randomised controlled trials conducted with

Study	Reason for exclusion
	paediatric patients) were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Sayenko, Dimitry G, Rath, Mrinal, Ferguson, Adam R et al. (2019) Self-Assisted Standing Enabled by Non-Invasive Spinal Stimulation after Spinal Cord Injury. Journal of neurotrauma 36(9): 1435-1450	- Country Study conducted in the US.
Saywell, Nicola, Taylor, Nick, Rodgers, Emma et al. (2017) Play-based interventions improve physical function for people with adult-acquired brain injury: a systematic review and meta-analysis of randomised controlled trials. Clinical rehabilitation 31(2): 145-157	- Population Systematic review including participants in (2/30 people with traumatic brain injury), unclear (1/30 adults with stroke and traumatic brain injury), and out (27/30 adults with stroke) of protocol. Results not presented separately for target population. Studies including participants with traumatic brain injury were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Schmidt, J., Fleming, J., Ownsworth, T. et al. (2013) Video feedback on functional task performance improves self-awareness after traumatic brain injury: A randomized controlled trial. Neurorehabilitation and Neural Repair 27(4): 316-324	- Outcomes No relevant outcomes reported. Reports measures of online awareness, intellectual awareness, emotional distress, and perceptions of rehabilitation.
Schmidt, J., Fleming, J., Ownsworth, T. et al. (2015) Maintenance of treatment effects of an occupation-based intervention with video feedback for adults with TBI. NeuroRehabilitation 36(2): 175-186	- Outcomes No relevant outcomes reported. Reports measures of online awareness, intellectual awareness, and emotional distress.
Schofield, C, Evans, K, Young, H et al. (2022) The development of a consensus statement for the prescription of powered wheelchair standing devices in Duchenne muscular dystrophy. Disability and Rehabilitation: An International, Multidisciplinary Journal 44(10): 1889-1897	- Publication type Literature review, not a systematic review.
Schwartz, D.A. and Schofield, K.A. (2023) Utilization of 3D printed orthoses for musculoskeletal conditions of the upper extremity: A systematic review. Journal of Hand Therapy 36(1): 166-178	- Study design (adults) Systematic review with 2/10 randomised controlled trials, 5/10 case series, 1/10 case reports, 1/10 non-controlled studies, and 1/10 retrospective studies. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Shamout, S, Biardeau, X, Corcos, J et al. (2017) Outcome comparison of different approaches to self-intermittent catheterization in neurogenic patients: a systematic review. Spinal cord 55(7): 629-643	- Publication date Systematic review with 3/31 studies published 2013 onwards, and 28/31 published pre-2013. Studies published 2013 onwards were checked against protocol criteria – 2 were identified as potentially relevant and retrieved for further screening.
Shuai, Lang, Yu, Guo-Hua, Feng, Zhen et al. (2016) Application of a paraplegic gait orthosis in thoracolumbar spinal cord injury. Neural regeneration research 11(12): 1997-2003	- Country Study conducted in China.

Study	Reason for exclusion
Smaoui, Sana; Langridge, Amy; Steele, Catriona M (2020) The Effect of Lingual Resistance Training Interventions on Adult Swallow Function: A Systematic Review. Dysphagia 35(5): 745-761	- Population Systematic review including participants in (1/7 people with traumatic brain injury) and out (5/7 adults with stroke and 1/7 healthy participants) of protocol. Results not presented separately for target population. Studies including participants with traumatic brain injury were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
So, Hui Young, Kim, Sung Reul, Kim, Sunho et al. (2023) Effect of Home-Based Self-Management Intervention for Community-Dwelling Patients with Early Parkinson's Disease: A Feasibility Study. Journal of community health nursing 40(2): 133-146	- Country Study conducted in South Korea.
Soke, Fatih, Guclu-Gunduz, Arzu, Kocer, Bilge et al. (2021) Task-oriented circuit training combined with aerobic training improves motor performance and balance in people with Parkinson's Disease. Acta neurologica Belgica 121(2): 535-543	- Country Study conducted in Turkey.
Solana, J., Caceres, C., Garcia-Molina, A. et al. (2014) Intelligent Therapy Assistant (ITA) for cognitive rehabilitation in patients with acquired brain injury. BMC medical informatics and decision making 14: 58	- Study design (adults) Non-randomised study.
Spreadbury, John Henry; Young, Alex; Kipps, Christopher Myles (2022) A Comprehensive Literature Search of Digital Health Technology Use in Neurological Conditions: Review of Digital Tools to Promote Self-management and Support. Journal of medical Internet research 24(7): e31929	- Outcomes Systematic review reporting no relevant outcomes. Reports examples of digital health technology for neurological conditions and descriptions of functionality. Studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Stavroulakis, Theocharis, Walsh, Theresa, Shaw, Pamela J et al. (2013) Gastrostomy use in motor neurone disease (MND): a review, meta-analysis and survey of current practice. Amyotrophic lateral sclerosis & frontotemporal degeneration 14(2): 96-104	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Straudi, Sofia, De Marco, Gianluca, Martinuzzi, Carlotta et al. (2022) Combining a supervised and home-based task-oriented circuit training improves walking endurance in patients with multiple sclerosis. The MS_TOCT randomized-controlled trial. Multiple sclerosis and related disorders 60: 103721	- Intervention Task-orientated circuit aerobic training programme.
Straudi, Sofia, Martinuzzi, Carlotta, Pavarelli, Claudia et al. (2014) A task-oriented circuit training in multiple sclerosis: a feasibility study. BMC neurology 14: 124	- Intervention Task-orientated circuit aerobic training programme.
Strijbos, Denise, Keszthelyi, Daniel, Bogie, Roel M M et al. (2018) A Systematic Review and Meta-Analysis on Outcomes and Complications of Percutaneous Endoscopic Versus	- Publication date Systematic review with 4/16 studies published 2013 onwards, and 12/16 published pre-2013.

Study	Reason for exclusion
Radiologic Gastrostomy for Enteral Feeding. Journal of clinical gastroenterology 52(9): 753-764	Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Sturkenboom, Ingrid H W M, Hendriks, Jan C M, Graff, Maud J L et al. (2015) Economic evaluation of occupational therapy in Parkinson's disease: A randomized controlled trial. Movement disorders : official journal of the Movement Disorder Society 30(8): 1059-67	- Outcomes No relevant outcomes reported. Reports measures of cost-effectiveness.
Suarilah, Ira, Zulkarnain, Hakim, Saragih, Ita Daryanti et al. (2022) Effectiveness of telehealth interventions among traumatic brain injury survivors: A systematic review and meta-analysis. Journal of telemedicine and telecare: 1357633x221102264	- Country Systematic review with 1/17 of the included studies conducted in the Netherlands, 15/17 in the US, and 1/17 in Hong Kong. Dutch study was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.
Suganthirababu, P., Prathap, L., Kumaresan, A. et al. (2023) Recent trends in applying functional electrical stimulation in the management of spastic paraplegia induced by spinal cord injury: a systematic review. Physiotherapy Quarterly 31(1): 58-64	- Outcomes Systematic review reporting no relevant outcomes. Reports measures of spasticity and gait parameters. Studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Sulistyo, Adrienne, Abrahao, Agessandro, Freitas, Maria Eliza et al. (2023) Enteral tube feeding for amyotrophic lateral sclerosis/motor neuron disease. The Cochrane database of systematic reviews 8: cd004030	- Other protocol criteria Systematic review with no included studies.
Suputtitada, A., Chen, C.P.C., Pongmala, C. et al. (2022) The Efficacy of a Newly Developed Cueing Device for Gait Mobility in Parkinson's Disease. Parkinson's Disease 2022: 7360414	- Country Study conducted in Thailand.
Swan, Katina, Speyer, Renee, Heijnen, Bas J et al. (2015) Living with oropharyngeal dysphagia: Effects of bolus modification on health-related quality of life-A systematic review. Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation 24(10): 2447-2456	- Publication date Systematic review with 2/8 studies published 2013 onwards, and 6/8 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Tarameshlu, Maryam, Ghelichi, Leila, Azimi, Amir Reza et al. (2019) The effect of traditional dysphagia therapy on the swallowing function in patients with Multiple Sclerosis: A pilot double-blinded randomized controlled trial. Journal of bodywork and movement therapies 23(1): 171-176	- Country Study conducted in Iran.
Tate, R.L., Genders, M., Soo, C. et al. (2019) Preparing Adolescents for Life after School (PALS) Project: A Randomised Controlled Trial of a Coaching Intervention for Young People with Acquired Brain Injury. Brain Impairment 20(1): 37-48	- Intervention Coaching to prepare adolescents for life after secondary school and not an intervention for personal activities of daily living, extended activities of daily living, or community living skills. Has been included in evidence review investigating interventions for access to education.

Study	Reason for exclusion
Taveggia, Giovanni, Ragusa, Ivana, Trani, Vincenzo et al. (2015) Robotic tilt table reduces the occurrence of orthostatic hypotension over time in vegetative states. International journal of rehabilitation research. Internationale Zeitschrift fur Rehabilitationsforschung. Revue internationale de recherches de readaptation 38(2): 162-6	- Outcomes No relevant outcomes reported. Reports measures of blood pressure.
Taylor, Paul, Barrett, Catherine, Mann, Geraldine et al. (2014) A feasibility study to investigate the effect of functional electrical stimulation and physiotherapy exercise on the quality of gait of people with multiple sclerosis. Neuromodulation : journal of the International Neuromodulation Society 17(1): 75-84	- Outcomes No relevant outcomes reported. Reports measures of gait parameters and quality of life (sub-scale scores only presented).
Tennigkeit, Jenny, Feige, Tim, Haak, Maria et al. (2020) Structured Care and Self-Management Education for Persons with Parkinson's Disease: Why the First Does Not Go without the Second-Systematic Review, Experiences and Implementation Concepts from Sweden and Germany. Journal of clinical medicine 9(9)	- Publication date Systematic review with 7/23 studies published 2013 onwards, and 16/23 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Terre, R, Bernabeu, M, Morales, A et al. (2016) Neuromuscular electrical stimulation in oropharyngeal dysphagia secondary to traumatic brain injury. Brain injury: 20160738	- Publication type Conference abstract.
Thibaut, Aurore, Deltombe, Thierry, Wannez, Sarah et al. (2015) Impact of soft splints on upper limb spasticity in chronic patients with disorders of consciousness: A randomized, single-blind, controlled trial. Brain injury 29(78): 830-6	- Intervention Soft splints for upper limb function and not dynamic splints for upper limb functioning.
Townsend, Elise L; Tamhane, Himani; Gross, K Douglas (2015) Effects of AFO use on walking in boys with Duchenne muscular dystrophy: a pilot study. Pediatric physical therapy : the official publication of the Section on Pediatrics of the American Physical Therapy Association 27(1): 24-9	- Country Study conducted in the US.
Trevena-Peters, Jessica, McKay, Adam, Spitz, Gershon et al. (2018) Efficacy of Activities of Daily Living Retraining During Posttraumatic Amnesia: A Randomized Controlled Trial. Archives of physical medicine and rehabilitation 99(2): 329-337e2	- Population Participants' condition does not meet the guideline definition of chronic (3 months since diagnosis or injury). Time since injury not reported but mean time to rehabilitation was 16.46 (standard deviation 10.52) days.
Triegaardt, J., Han, T.S., Sada, C. et al. (2020) The role of virtual reality on outcomes in rehabilitation of Parkinson's disease: meta-analysis and systematic review in 1031 participants. Neurological Sciences 41(3): 529-536	- Study design (adults) Systematic review with 10/27 randomised controlled trials and 17/27 non-randomised studies (no further details reported). Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Tse, Cynthia M, Chisholm, Amanda E, Lam, Tania et al. (2018) A systematic review of the effectiveness of task-specific rehabilitation	- Publication date Systematic review with 6/19 studies published 2013 onwards, and 13/19 published pre-2013.

Study	Reason for exclusion
interventions for improving independent sitting and standing function in spinal cord injury. The journal of spinal cord medicine 41(3): 254-266	Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Valenzano, Teresa J; Waito, Ashley A; Steele, Catriona M (2016) A Review of Dysphagia Presentation and Intervention Following Traumatic Spinal Injury: An Understudied Population. Dysphagia 31(5): 598-609	- Publication date Systematic review with 2/5 studies published 2013 onwards, and 3/5 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
van Dam, Kirstin, Gielissen, Marieke, Bles, Ruth et al. (2023) The impact of assistive living technology on perceived independence of people with a physical disability in executing daily activities: a systematic literature review. Disability and rehabilitation. Assistive technology: 1-10	- Study design (adults) Systematic review with 1/9 quantitative studies, 1/9 mixed-methods studies, and 7/9 qualitative studies. Quantitative and mixed-methods studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
van den Heuvel, Maarten R C, Kwakkel, Gert, Beek, Peter J et al. (2014) Effects of augmented visual feedback during balance training in Parkinson's disease: a pilot randomized clinical trial. Parkinsonism & related disorders 20(12): 1352-8	- Intervention Interactive balance exercises with augmented visual feedback. On the basis of the full text, the study seems more directly relevant to review E regarding stability, mobility and upper limb functioning, and was further screened for that question.
van der Feen, F E, de Haan, G A, van der Lijn, I et al. (2020) Independent outdoor mobility of persons with multiple sclerosis - A systematic review. Multiple sclerosis and related disorders 37: 101463	- Outcomes Systematic review reporting no relevant outcomes. Reports examples of independent outdoor mobility options for people with multiple sclerosis and a narrative summary of influencing factors for mobility in this population. Studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
van Gils, Anne, Schoevers, Robert A, Bonvanie, Irma J et al. (2016) Self-Help for Medically Unexplained Symptoms: A Systematic Review and Meta-Analysis. Psychosomatic medicine 78(6): 728-39	- Publication date Systematic review with 2/18 studies published 2013 onwards, and 16/18 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
van Hooren, M R A, Baijens, L W J, Voskuilen, S et al. (2014) Treatment effects for dysphagia in Parkinson's disease: a systematic review. Parkinsonism & related disorders 20(8): 800-7	- Publication date Systematic review with 3/12 studies published 2013 onwards, and 9/12 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
van Middendorp, J J, Watkins, F, Park, C et al. (2015) Eye-tracking computer systems for inpatients with tetraplegia: findings from a feasibility study. Spinal cord 53(3): 221-225	- Study design (adults) No comparator group, not a randomised controlled trial
Van Vleet, Thomas, Bonato, Paolo, Fabara, Eric et al. (2020) Alertness Training Improves Spatial Bias and Functional Ability in Spatial Neglect. Annals of neurology 88(4): 747-758	- Country Study conducted in the US.

Study	Reason for exclusion
Vandenberg, Brooke E, Advocat, Jenny, Hassed, Craig et al. (2019) Mindfulness-based lifestyle programs for the self-management of Parkinson's disease in Australia. Health promotion international 34(4): 668-676	- Study design (adults) Limited to qualitative data analysis and reporting.
Velde, S V, Biervliet, S V, Bruyne, R D et al. (2013) A systematic review on bowel management and the success rate of the various treatment modalities in spina bifida patients. Spinal cord 51(12): 873-81	- Publication date Systematic review with 2/31 studies published 2013 onwards, and 29/31 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Ventura, Sara, Ottoboni, Giovanni, Pappada, Alessandro et al. (2023) Acceptance of Assistive Technology by Users with Motor Disabilities Due to Spinal Cord or Acquired Brain Injuries: A Systematic Review. Journal of clinical medicine 12(8)	- Outcomes Systematic review reporting no relevant outcomes. Reports measures of satisfaction, ease to use, comfort, safety, learnability, usefulness, and motivation. Studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Vogel, AP, Keage, MJ, Johansson, K et al. (2015) Treatment for dysphagia (swallowing difficulties) in hereditary ataxia. Cochrane Database of Systematic Reviews	- Other protocol criteria Systematic review with no included studies.
Volpe, Daniele; Giantin, Maria Giulia; Fasano, Alfonso (2014) A wearable proprioceptive stabilizer (Equistasi R) for rehabilitation of postural instability in Parkinson's disease: a phase II randomized double-blind, double-dummy, controlled study. PloS one 9(11): e112065	- Intervention Wearable postural stabiliser and not neuromuscular electrical stimulation, functional electrical stimulation, or full body neuroprothesis.
Wade, Shari L, Sidol, Craig, Babcock, Lynn et al. (2023) Findings from a Randomized Controlled Trial of SMART: An EHealth Intervention for Mild Traumatic Brain Injury. Journal of pediatric psychology 48(3): 241-253	- Country Study conducted in the US.
Wang, Dong, Zheng, Shao-Qin, Chen, Xian-Cai et al. (2015) Comparisons between small intestinal and gastric feeding in severe traumatic brain injury: a systematic review and meta-analysis of randomized controlled trials. Journal of neurosurgery 123(5): 1194-201	- Paper unavailable
Wang, Jing, Mahajan, Harshal P, Toto, Pamela E et al. (2019) The feasibility of an automatic prompting system in assisting people with traumatic brain injury in cooking tasks. Disability and rehabilitation. Assistive technology 14(8): 817-825	- Country Study conducted in the US.
Wang, Qi, Markopoulos, Panos, Yu, Bin et al. (2017) Interactive wearable systems for upper body rehabilitation: a systematic review. Journal of neuroengineering and rehabilitation 14(1): 20	- Publication date Systematic review with 29/45 studies published 2013 onwards, and 16/45 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.

Study	Reason for exclusion
Wang, Xiang, Dong, Yan, Han, Xi et al. (2013) Nutritional support for patients sustaining traumatic brain injury: a systematic review and meta-analysis of prospective studies. PloS one 8(3): e58838	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Wang, Zhuo, Wang, Zhi, Fang, Qi et al. (2019) Effect of Expiratory Muscle Strength Training on Swallowing and Cough Functions in Patients With Neurological Diseases: A Meta-analysis. American journal of physical medicine & rehabilitation 98(12): 1060-1066	- Population Systematic review including participants in (2/10 people with amyotrophic lateral sclerosis, 2/10 people with Parkinson's disease, and 1/10 people with multiple sclerosis) and out (5/10 adults with stroke) of protocol. Results not presented separately for target population. Studies including participants with amyotrophic lateral sclerosis, Parkinson's disease and multiple sclerosis were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Webster, Amy, Poyade, Matthieu, Rooney, Scott et al. (2021) Upper limb rehabilitation interventions using virtual reality for people with multiple sclerosis: A systematic review. Multiple sclerosis and related disorders 47: 102610	- Study design (adults) Systematic review with 6/10 randomised controlled trials, 3/10 non-controlled trials, and 1/10 observational studies. Randomised controlled trials were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Weicker, J.; Villringer, A.; Thone-Otto, A. (2016) Can impaired working memory functioning be improved by training? A meta-analysis with a special focus on brain injured patients. Neuropsychology 30(2): 190-212	- Publication type Dissertation.
Weir, Rodney L; Danilovich, Margaret K; Hoover, Donald L (2022) Systematic review of the effectiveness of caregiver training with functional mobility tasks for informal caregivers assisting patients with neurological diagnoses. Disability and rehabilitation 44(18): 5082-5089	- Publication date Systematic review with 3/12 studies published 2013 onwards, and 9/12 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Wen, Xin, Liu, Zicai, Liu, Xuejin et al. (2022) The effects of physiotherapy treatments on dysphagia in Parkinson's disease: A systematic review of randomized controlled trials. Brain research bulletin 188: 59-66	- Intervention Systematic review with mix of interventions in (4/10 electrical stimulation, 2/10 expiratory muscle strength training, and 1/10 swallowing exercise interventions) and out (1/10 acupuncture, 1/10 botulinum toxin injections, and 1/10 postural techniques) of protocol. Studies investigating electrical stimulation and swallowing exercises were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Wheeler, Steven; Acord-Vira, Amanda; Davis, Diana (2016) Effectiveness of Interventions to Improve Occupational Performance for People With Psychosocial, Behavioral, and Emotional Impairments After Brain Injury: A Systematic Review. The American journal of occupational therapy : official publication of the American	- Publication date Systematic review with 1/35 studies published 2013 onwards, and 34/35 published pre-2013. Study published 2013 onwards was checked against protocol criteria and was either not relevant or had been separately located by the literature search and screened.

Study	Reason for exclusion
Occupational Therapy Association 70(3): 7003180060p1-9	
Wilde, Mary H, McMahon, James M, Fairbanks, Eileen et al. (2016) Feasibility of a Web-Based Self-management Intervention for Intermittent Urinary Catheter Users With Spinal Cord Injury. Journal of wound, ostomy, and continence nursing : official publication of The Wound, Ostomy and Continence Nurses Society 43(5): 529-38	- Country Study conducted in the US.
Wilhelm, A., Riedl, T., Paumann, C. et al. (2022) Exploring a New Cueing Device in People Who Experience Freezing of Gait: Acceptance of a Study Design. Parkinson's Disease 2022: 1631169	- Outcomes No relevant outcomes reported. Reports measures of acceptability of study design, walking parameters, and impressions of change.
Williams, Alison M M, Deegan, Emily, Walter, Matthias et al. (2021) Exoskeleton gait training to improve lower urinary tract function in people with motor-complete spinal cord injury: A randomized pilot trial. Journal of rehabilitation medicine 53(8): jrm00222	- Intervention Exoskeleton gait training to improve lower urinary tract function.
Wills, Olivia C and Probst, Yasmine C (2022) Understanding lifestyle self-management regimens that improve the life quality of people living with multiple sclerosis: a systematic review and meta-analysis. Health and quality of life outcomes 20(1): 153	- Country 5/57 in Australia, 5/57 in the UK, 3/57 in the Netherlands, 2/57 in Belgium, 2/57 in Denmark, 2/57 in Germany, 2/57 in Norway, 1/57 in Canada, 1/57 in Finland, 1/57 in Italy, 1/57 in New Zealand, 1/57 in Slovenia, 1/57 in Switzerland, 21/57 in the US, 7/57 in Iran, 1/57 in India, and 1/57 in Turkey. Australia, UK, Dutch, Belgian, Danish, German, Norwegian, Canadian, Finnish, Italian, New Zealand, Slovenian, and Swiss studies were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Wilson, Samantha A, Byrne, Paula, Rodgers, Sarah E et al. (2022) A Systematic Review of Smartphone and Tablet Use by Older Adults With and Without Cognitive Impairment. Innovation in aging 6(2): igac002	- Population Systematic review including participants in (8/28 older adults with acquired brain injury) and out (10/27 older adults with dementia or mild cognitive impairment and 10/27 older adults) of protocol. Results not presented separately for target population. Studies including participants with acquired brain injury were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Winiker, Katharina and Kertscher, Berit (2023) Behavioural interventions for swallowing in subjects with Parkinson's disease: A mixed methods systematic review. International journal of language & communication disorders 58(4): 1375-1404	- Publication date Systematic review with 20/33 studies published 2013 onwards, and 13/33 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Worobey, Lynn A, Kirby, R Lee, Heinemann, Allen W et al. (2016) Effectiveness of Group Wheelchair Skills Training for People With Spinal Cord Injury: A Randomized Controlled Trial.	- Country Study conducted in the US.

Study	Reason for exclusion
Archives of physical medicine and rehabilitation 97(10): 1777-1784e3	
Wright, Courtney J, Zeeman, Heidi, Kendall, Elizabeth et al. (2017) What housing features should inform the development of housing solutions for adults with neurological disability?: A systematic review of the literature. Health & place 46: 234-248	- Publication date Systematic review with 2/26 studies published 2013 onwards, and 24/26 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Yang, Biying and Shi, Xiaolei (2017) Percutaneous endoscopic gastrostomy versus fluoroscopic gastrostomy in amyotrophic lateral sclerosis (ALS) sufferers with nutritional impairment: A meta-analysis of current studies. Oncotarget 8(60): 102244-102253	- Country Study conducted in China.
Yang, Wen-Chieh, Hsu, Wei-Li, Wu, Ruey-Meei et al. (2016) Immediate Effects of Clock-Turn Strategy on the Pattern and Performance of Narrow Turning in Persons With Parkinson Disease. Journal of neurologic physical therapy : JNPT 40(4): 249-56	- Outcomes No relevant outcomes reported. Reports measures of gait parameters and turning performance.
Yao, T.; Yang, H.; Xu, Y. (2019) Effects of touching services on activities of daily living and emotion of patients with Parkinson's disease. Acta Medica Mediterranea 35(3): 1551-1554	- Country Study conducted in China.
Yavas, Ipek, Kahraman, Turhan, Sagici, Ozge et al. (2023) Feasibility of Telerehabilitation-Based Pelvic Floor Muscle Training for Urinary Incontinence in People With Multiple Sclerosis: A Randomized, Controlled, Assessor-Blinded Study. Journal of neurologic physical therapy : JNPT 47(4): 217-226	- Country Study conducted in Turkey.
Yip, Ben C B and Man, David W K (2013) Virtual reality-based prospective memory training program for people with acquired brain injury. NeuroRehabilitation 32(1): 103-15	- Country Study conducted in Hong Kong.
You, Ji-Sung; Kim, You Lim; Lee, Suk Min (2017) Effects of a standard transfer exercise program on transfer quality and activities of daily living for transfer-dependent spinal cord injury patients. Journal of physical therapy science 29(3): 478-483	- Country Study conducted in South Korea.
Yuan, Tian-Wen, He, Yang, Wang, Sai-Bo et al. (2020) Technical success rate and safety of radiologically inserted gastrostomy versus percutaneous endoscopic gastrostomy in motor neuron disease patients undergoing: A systematic review and meta-analysis. Journal of the neurological sciences 410: 116622	- Publication date Systematic review with 2/7 studies published 2013 onwards, and 5/7 published pre-2013. Studies published 2013 onwards were checked against protocol criteria and were either not relevant or had been separately located by the literature search and screened.
Zhang, Chaoyang, Li, Ning, Xue, Xiali et al. (2023) Effects of lower limb exoskeleton gait orthosis compared to mechanical gait orthosis on rehabilitation of patients with spinal cord	- Study design (adults) Systematic review with 1/11 randomised controlled trials, 9/11 case-control studies, and 1/11 case series. Randomised controlled trial was checked against protocol criteria and was either

Study	Reason for exclusion
injury: A systematic review and future perspectives. Gait & posture 102: 64-71	not relevant or had been separately located by the literature search and screened.
Zhang, Jun; Yu, Yi; Jiang, Rong (2018) Influence of rehabilitation exercise intervention on limb motor function and self-care ability of patients with Parkinson's disease. Chinese nursing research 32(21): 3410-3413	- Other protocol criteria Chinese language article.
Zhang, Mingming; Davies, T Claire; Xie, Shane (2013) Effectiveness of robot-assisted therapy on ankle rehabilitation--a systematic review. Journal of neuroengineering and rehabilitation 10: 30	- Publication date Systematic review with all included studies published pre-2013. Therefore no studies checked against protocol.
Zhang, Y., Liu, W., Lin, G. et al. (2020) Effect of enteral nutrition nursing combined with parenteral nutrition nursing intervention on nutritional status and immune function in patients with severe craniocerebral injury. International Journal of Clinical and Experimental Medicine 13(9): 6936-6944	- Country Study conducted in China.

Excluded economic studies

See Supplement 2 for the list of excluded studies across all reviews.

Appendix K Research recommendations – full details

Research recommendations for review question: What is the effectiveness of approaches for improving or maintaining independence in activities of daily living?

K.1.1 Research recommendation

What is the effectiveness and cost effectiveness of approaches for improving or maintaining independence in activities of daily living for people with chronic neurological disorders?

K.1.2 Why this is important

Children and adults with chronic neurological conditions often experience complex and varying disabilities across their whole life course. These disabilities may directly impact on the tasks that make up a person's chosen activities of daily living by increasing task effort, reducing task efficiency and decreasing safety in task performance

These problems with task performance may, in turn, lead to decreasing independence, an increasing need for care and support from others and declining health-related quality of life. It is therefore important to research interventions to promote and support independence in activities of daily living to ensure needs are met over a person's lifetime.

K.1.3 Rationale for research recommendation

Table 25: Research recommendation rationale

Importance to 'patients' or the population	There is little research demonstrating the value of targeted and specialist interventions to promote independence in activities of daily living across a full life course, for children and adults with chronic neurological conditions.
Relevance to NICE guidance	Interventions to promote independence in activities of daily living have been considered in this guideline and there is a lack of data regarding effective and cost-effective treatment and best practice.
Relevance to the NHS	There is significant burden to the health care economy due to unmet needs for children and adults with chronic neurological conditions.
National priorities	High
Current evidence base	This evidence review showed a paucity of evidence in the area of approaches to improve or sustain independence in activities of daily living. Identified evidence failed to show consistent benefits of noted interventions, and there was a lack of follow-up data to show long-term effectiveness of interventions.
Equality considerations	This evidence review identified several populations with no trials reporting data for approaches to improve or sustain independence in activities of daily living: children and young people with chronic neurological disorders; adults with an acquired spinal cord injury; adults with acquired

	peripheral nerve disorder; adults with functional neurological disorder.

K.1.4 Modified PICO table

Table 26: Research recommendation modified PICO table

Population	Children, young people and adults with rehabilitation needs due to the following chronic neurological disorders: • Acquired brain injury • Acquired spinal cord injury • Acquired peripheral nerve disorders • Progressive neurological diseases • Functional neurological disorders
Intervention	1. Interventions to develop skills for adaptive functioning or functional task training • Overall approaches • Interventions for personal activities of daily living (PADL) • Interventions for extended activities of daily living (EADL) encompassing both domestic and community activities • Interventions for community living skills • Interventions for functional mobility 2. Interventions, equipment, and devices to support functioning and modify the environment • Technological interventions • Postural/24-hour positioning management systems (including sleep systems) • Wearable technology • Robotic gait orthoses or exoskeletons • Interventions for upper limb function 3. Interventions for sustaining or improving capability in eating, drinking and swallowing. • Diet and fluid modification • Swallowing exercises, manoeuvres and programmes • Neuromuscular electrical stimulation or pharyngeal stimulation, transcranial direct current or magnetic stimulation • Enteral tube feeding

Comparator	Interventions compared with others in the same group or:
	• Placebo (placebo or sham)
	• Control (no intervention, waitlist, standard rehabilitation care alone, or 'usual care')
	• The same intervention (as listed under 'intervention') but varied in terms of:
	  ○ Frequency
	  ○ Intensity

	○ Timing ○ Setting
Outcome	• Functional independence • Quality of life including physical and mental health-related, and social care-related • Personal goal attainment • Swallowing related quality of life • Pain • Carer quality of life • Cost-effectiveness (including resource use measurements and QALY estimations using a validated preference-based measure such as the EQ-5D or SF-6D)
Study design	• Experimental study with random assignment to intervention and control groups. • Experimental study with non-random assignment to intervention and control groups (quasi-randomised controlled trials, non-randomised controlled trials and prospective and retrospective cohort studies)
Timeframe	Long term (over 12 months follow-up)
Additional information	Due to the heterogeneity of the chronic neurological disorder population, if multiple conditions or disorders are recruited, researchers should ensure analysis is stratified by sub-group (that is, acquired brain injury, acquired spinal cord injury, acquired peripheral nerve disorders, progressive neurological diseases, and functional neurological disorders).

EQ-5D: EuroQol 5-dimensions; SF-6D: short-form 6-dimension; QALY: quality-adjusted life years