



An Evidence Check

Allied health service levels in chronic condition management: An Evidence Check (Phase 1)

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Executive summary

Introduction

Chronic conditions account for the majority of disease burden in Australia, with about one in two Australians living with at least one chronic condition and an estimated 4.4 million years of healthy life lost to chronic illness in 2023. Most people with chronic conditions are managed in primary care and approximately 70% of GP encounters are primarily for chronic condition management. Since the introduction of the Enhanced Primary Care package and subsequent GP Management Plans and Team Care Arrangements (TCAs), Medicare-subsidised Chronic Condition Management (CCM) items have been used to support longer GP consultations and multidisciplinary care, including up to five subsidised allied health visits per year for eligible patients and up to 10 visits for Aboriginal and Torres Strait Islander patients. The use of CCM allied health items has risen steadily, particularly among older individuals and those with diabetes, functional limitations and lower socioeconomic status. There is emerging evidence that GPMP- and TCA-based care can improve outcomes and reduce hospitalisations for some chronic conditions. However, it remains unclear whether the current cap of five allied health sessions per year is optimal, especially given multimorbidity and the possibility that a single condition may consume all sessions.

The Department of Health, Disability and Ageing ('Department'), through the Medicare Benefits Schedule Review Advisory Committee (MRAC), commissioned this Evidence Check to assess whether current Medicare Benefits Schedule (MBS) funded allied health chronic condition management services are structured in a way that supports patient outcomes. The Evidence Check was designed to inform decisions about the number and duration of allied health services that should be subsidised through the MBS for people with chronic conditions. The first phase of the Evidence Check focused on the chronic conditions of stroke (post/sub-acute and chronic), Parkinson's disease and diabetes (types 1 and 2), and aimed to examine whether there is a relationship between allied health consultation dose—defined as the number and/or length of individual consultations—and health-related outcomes, and whether this relationship differs by allied health profession or condition.

Methods

We conducted a rapid Evidence Check review of peer-reviewed and grey literature, with Phase 1 focusing on three chronic conditions: stroke, Parkinson's disease and diabetes. Two reviewers independently searched and screened three databases, with disagreements resolved by a third reviewer. Systematic reviews of allied health interventions were included. Data were extracted on study design, intervention type, allied health profession, consultation number and duration, and health-related outcomes. We assessed strength of evidence using the designs of underlying primary

studies, alongside assessment of the risk of bias of primary studies as reported within the reviews. Completeness of dose reporting for consultation number and duration was rated as good or poor. Stakeholder organisations were invited to submit additional peer-reviewed and grey literature, which we screened using similar processes.

Findings

The Evidence Check identified 108 systematic reviews of allied health interventions for adults with stroke (75), Parkinson's disease (26) and diabetes (7). Most reviews examined exercise-based or multimodal programs, with fewer focused on psychological or communication-specific interventions. Where professions were reported, physiotherapists and occupational therapists were most frequently named, usually as part of multidisciplinary teams that also included speech pathologists, psychologists, nurses, social workers, exercise physiologists and other allied health professionals. Outcomes were dominated by measures of physical function and activity (such as motor impairment, balance, gait, mobility and upper-limb function), with many reviews also reporting health-related quality of life and a smaller group examining psychological outcomes.

Using the designs of underlying primary studies to categorise strength of evidence, 104 of the 108 reviews (96%) were rated strong because they included only randomised controlled trials, one was rated moderate and three were rated weak. The risk of bias assessments the reviews themselves completed on their included primary studies indicated most studies (88/108, 81%) were at low or moderate risk of bias. Assessments of completeness of reporting for consultation dose showed that for the number of consultations, 89/108 reviews (82%) were rated as having good completeness, and for consultation duration 88/108 (81%) were rated as good. Overall, 78/108 reviews (72%) provided good data for both the number and length of consultations. Six studies had primary aims and analyses that explicitly examined dose–outcome relationships. These high-completeness reviews formed the main basis for describing dose patterns.

Within the high-completeness subset, allied health interventions for stroke, Parkinson's disease and diabetes were consistently delivered as multi-session programs rather than one-off visits. Session lengths were broadly similar across conditions: most programs used consultations of about 45–55 minutes, with a minority reporting substantially longer sessions. By contrast, the total number of consultations varied widely both within and between conditions. On average, diabetes programs used fewer consultations, with a typical midpoint of about 14 consultations compared with 29 for stroke and 53 for Parkinson's disease.

The six reviews that explicitly examined dose–outcome relationships suggested that some structured dose is usually needed to achieve clinically meaningful improvements; for example, programs delivered several times per week over multiple weeks, using consultations that ranged in length from 30 to 60 minutes. Higher-dose or more intensive interventions sometimes showed larger gains than very low-dose comparators in areas such as gait, balance, aphasia and participation. However, dose–response analyses were based on small numbers of heterogeneous trials, and findings were mixed, with some reporting diminishing returns.

Of the 16 allied health and primary care peak stakeholder organisations invited to provide literature, 13 contributed grey literature (n=62) and peer-reviewed publications (n=367). Of the 429 references provided by the stakeholders, 42 peer-reviewed documents were screened for inclusion with the peer-reviewed literature from database searches, and two grey literature documents were eligible for inclusion.

The grey literature told a similar story, consistently indicating that allied health chronic disease care should involve a multidisciplinary team and be delivered over multiple consultations. These documents also provided additional contextual information that indicated that the dose of intervention delivered in practice was strongly shaped by funding mechanisms, pricing structures, workforce capacity and accessibility or equity issues.

Overall, the available evidence indicates that greater exposure to allied health interventions may be beneficial up to a point but remains too sparse and inconsistent to define a single 'optimal' number or length of consultations for any of the conditions or professions examined.

These findings were discussed and the strengths and limitations of the Evidence Check were provided to aid their interpretation.

Considerations

Several clear themes emerged in this Evidence Check that should be taken into consideration when determining whether the current MBS-funded allied health chronic condition management services are appropriately structured to support improved patient outcomes. We presented these as considerations here and in the final section of the report:

1. Increase the cap on Medicare-subsidised allied health sessions
 - The current limit of five sessions per year under MBS Chronic Condition Management items is insufficient for clinically meaningful outcomes for people with stroke, Parkinson's disease and diabetes
 - Evidence shows that effective allied health interventions for stroke and Parkinson's disease often require multi-session blocks (e.g. 29 sessions for stroke, 53 for Parkinson's disease), while diabetes programs typically require fewer sessions (e.g. 14 sessions)
 - A solution might be to implement condition-specific caps or flexible models that allow higher session numbers for people with more complex long-term conditions.
2. Review consultation length
 - Most effective interventions use consultations of 45–55 minutes; very short sessions (<20 minutes) are rarely sufficient
 - Align MBS item descriptors with standard clinical practice (45–60 minutes) and consider differential rebates for longer initial assessments.
3. Support multidisciplinary multi-session care
 - Outcomes improve when care is delivered by multidisciplinary teams

- Review MBS allied health items so that they do not restrict access across professions and consider separate caps per profession rather than a shared pool.
4. Enable a flexible approach to facilitate intensive and ongoing therapy for some neurological conditions
- For people with stroke and aphasia, intensive blocks (e.g., 3–4 hours/week, 5 days/week for ≥ 50 hours) are associated with better outcomes.

Introduction

Half of the top 10 leading causes of early death and disability worldwide are chronic diseases.¹ One in two Australians has at least one chronic condition, and in 2023 Australians lost an estimated 4.4 million years of healthy life from chronic conditions, equivalent to 85% of the total disease burden in that year.² The most prevalent chronic conditions in the latest National Health Survey were mental and behavioural, musculoskeletal (e.g. back problems), arthritis, asthma, diabetes and cardiovascular conditions (heart, stroke and vascular diseases).³

Most people with chronic conditions are managed by their general practitioner (GP) with approximately 70% of Australian GP encounters primarily associated with the management of chronic conditions.⁴ Primary care in Australia is healthcare that people seek in the community from a GP, allied health professional or nurse. The Enhanced Primary Care (EPC) package was introduced in 1999 and extended in 2005 with the introduction of the GP Management Plan (GPMP) and Team Care Arrangement (TCA) to support Australian GPs to better manage people with chronic conditions. On 1 July 2025, the requirement for a TCA was removed and the GPMP was renamed the GP Chronic Condition Management Plan (GPCCMP). These plans aimed to facilitate longer Medicare-subsidised appointments and multidisciplinary team care, including up to five health visits per year with allied and primary health professionals such as Aboriginal and Torres Strait Islander health workers, Aboriginal and Torres Strait Islander health practitioners, audiologists, chiropractors, diabetes educators, dietitians, exercise physiologists, mental health nurses, occupational therapists, osteopaths, physiotherapists, podiatrists, psychologists, social workers and speech pathologists.⁵

The use of MBS Chronic Condition Management (CCM) items has increased across all population subgroups, with the largest increase seen among older persons, particularly those aged 80–84 years. The rapid rise in use of allied health MBS CDM items over time, supported by both the number of claims per year and the increasing proportion of the population using these items, likely reflects a previous gap in access to care for people with chronic conditions.⁶ In 2021–22, 37% of Australians had claimed a Medicare-subsidised allied health service. Physiotherapy and podiatry have had the highest uptake of the allied health CCM services, particularly for those aged 80–84, with diabetes, more severe physical limitations and from low socioeconomic status backgrounds.^{6–8} There is evidence for better patient outcomes and reduced hospital admissions in some conditions being managed by GPMPs. Outcomes include reducing falls risk in older people⁹, patients with heart failure¹⁰ and diabetes¹¹, as well as general improved access to allied health professionals through primary care settings.^{5,8}

It is not known whether the current maximum number of five sessions with an allied health professional per calendar year is optimal for patient and health system outcomes, particularly when all sessions may be required for one condition¹² and since many people with chronic conditions often have more than one condition at the same time (multimorbidity).³ Therefore, the Department of Health, Disability and Ageing ('the Department'), through the Medicare Benefits Schedule Review Advisory Committee (MRAC), sought to assess whether current MBS-funded allied health chronic condition management services are appropriately structured to support improved patient outcomes for

all chronic conditions. However, Phase 1 of this Evidence Check review was intended to inform decisions about the optimal number and duration of services that should be subsidised through the MBS for patients with the chronic conditions of stroke (post/sub-acute and chronic), Parkinson's disease and diabetes (types 1 and 2), and aimed to address the following question.

Evidence Check question

Is there a relationship between allied health consultation dose (i.e. the number of individual service consultations and/or length of service consultation) and health-related outcomes for people experiencing one or more chronic conditions? Does this differ by profession or health condition?

Methods

Peer-reviewed literature

Search

Databases

We developed a search strategy using the three-step methodological approach originally proposed by Arksey and O'Malley and further refined by the Joanna Briggs Institute (JBI).^{13,14} First, we conducted a pilot search in MEDLINE via Ovid on 6 August 2025. Second, we reviewed the results from the pilot search and the search terms from an umbrella review on a similar topic⁵ to refine search terms with input from a University of Sydney School of Public Health librarian. Third, we translated the final search strategy for additional databases using the keywords and subject headings from the MEDLINE search to include the same keywords, and we searched for similar subject headings in the Embase database via Ovid and the Cochrane Database of Systematic Reviews.

The final systematic searches were conducted in the Cochrane Database of Systematic Reviews on 12 August 2025 and Ovid MEDLINE and Embase via Ovid on 19 August. The search terms and strings are detailed in Appendices 1 and 2. Results (n=1932) were imported into Covidence systematic review management software, where duplicates were removed.¹⁵

Screening

The full eligibility criteria, including the exclusions, are provided in Appendix 3. Briefly, study designs were limited to systematic reviews where at least 50% of included primary studies met the full eligibility criteria of the Evidence Check.

A post-hoc decision was made to split the Evidence Check into two phases by chronic conditions, with Phase 1 including stroke, Parkinson's disease and diabetes, to make delivery of findings feasible within the Department's preferred timelines.

We conducted the initial screening of titles and abstracts using the inclusion and exclusion criteria outlined in Appendix 3. Two reviewers (IH, CvK) independently screened a subset of 188 papers (10% of papers imported from database searches); tests for inter-rater reliability showed substantial agreement (proportional agreement = 0.86%, Cohen's Kappa = 0.71). Discrepancies were resolved through discussion with author NP. A single reviewer (IH) screened the remaining 1744 papers. As a result, 774 papers were selected for full-text screening.

Two reviewers (IH and CvK) initially double-screened a subset of 77 papers (approximately 10% of the total) to ensure consistency, resolving any disagreements through discussion with a third reviewer (NP). Following this, IH and CvK screened the remaining papers independently, with NP and SD

reviewing the final list of included studies for accuracy. At full-text screening, more than 300 studies were eligible for review. Given the volume, it was agreed that only the studies reporting on the chronic conditions of stroke, Parkinson's disease and diabetes would be included in Phase 1 of this Evidence Check, and chronic respiratory disease, cardiovascular disease and musculoskeletal conditions would be the subject of a subsequent Phase 2 Evidence Check in early 2026. The PRISMA flow diagram is provided in Appendix 4.

Data extraction

To assist with data extraction of eligible papers, we used AI-assisted bulk data extraction tools Elicit and Outread.ai (see Supplemental file 1). To ensure accuracy, rigorous human checks were conducted throughout the extraction process. To support consistent data extraction across reviews, standardised definitions were developed to classify primary allied health intervention type and outcomes for each review (Tables 1 and 2).

Table 1—Definitions for intervention category

Primary intervention type	Definition	Examples from extracted data
Exercise	Interventions where the main focus was structured physical exercise prescribed or supervised by an allied health professional.	Aerobic and resistance training; balance and gait training; treadmill or cycle ergometry; task-oriented exercise circuits; home or clinic-based programs led by physiotherapists or exercise physiologists.
Psychological / emotional support	Interventions where the main focus was psychological or emotional support, using structured counselling or psychological techniques.	Cognitive-behavioural therapy; counselling for depression or anxiety; stress-management programs; motivational interviewing; psychologically informed behaviour-change support.
Multimodal	Interventions where there were two or more primary intervention types (e.g. exercise, education, psychological support) delivered together.	Combined exercise and lifestyle/self-management education; exercise plus psychological or motivational support; exercise plus functional/task-specific training; multidisciplinary chronic disease programs including exercise, education and psychosocial components.
Other	Interventions that did not clearly fit the categories above or where the primary intervention was not clear.	Stand-alone lifestyle or self-management education; case-management or coordinated care models; service or pathway redesign;

Primary intervention type	Definition	Examples from extracted data
		allied-health clinics with poorly described or mixed consultation content.

Table 2—Outcome domains

Outcome domain	Definition	Examples from extracted data
Physical	Measures of impairment at the body/impairment level—changes in symptoms, motor performance, fitness or biomedical risk factors targeted by the intervention.	Motor symptom scales (e.g. UPDRS motor score, Fugl–Meyer), balance and gait measures (e.g. Berg Balance Scale, Timed Up-and-Go, 10-metre walk speed), walking capacity (e.g. 6-minute walk test), strength or endurance tests, cardiometabolic markers (e.g. HbA1c, fasting glucose, blood pressure, BMI), pain intensity scores.
Psychological / emotional	Outcomes capturing emotional wellbeing, mental health symptoms or psychological responses to living with a chronic condition.	Depression and anxiety scales (e.g. HADS, PHQ-9, GAD-7), psychological distress, fear of falling, diabetes-related distress, stress, self-efficacy or confidence ratings, mental health subscales of generic quality-of-life instruments.
Functional	Activity-level outcomes describing what people can do in everyday life— independence, mobility and ability to carry out daily tasks or roles.	Activities of daily living and functional independence measures (e.g. Barthel Index, Functional Independence Measure), mobility and transfer scales, instrumental ADLs, return-to-work or role participation, performance-based functional tests (e.g. sit-to-stand, stair climbing).
Other	Outcomes not primarily physical, psychological or functional but relevant to the impact of care or wider system effects.	Health-related quality of life composite scores (e.g. SF-36, EQ-5D, PDQ-39 total score), patient satisfaction with care, treatment adherence or self-management behaviours, disease knowledge, healthcare use (e.g. hospitalisations, ED presentations, primary care consultations).

Evidence appraisal and risk of bias assessment

Strength of evidence

Our classification system for rating the strength of evidence used strength of the study design(s) included in each systematic review to rate overall the strength of the evidence. This approach assumes that stronger designs, such as randomised controlled trials (RCTs) and well-designed quasi-experimental studies, are deliberately structured to minimise bias, that is, systematic errors in how a study is conducted or analysed that can lead to misleading conclusions about whether an intervention works. High-quality designs reduce bias by making comparison groups as similar as possible except for the intervention being tested, so that observed differences in outcomes are more likely to reflect the intervention itself rather than other factors, providing more confidence in the findings. Table 3 summarises the strength-of-evidence rating categories.

Table 3—Strength of evidence ratings

Rating	Criteria
 Strong	The systematic review included mostly high-quality experimental designs, such as RCTs, cluster RCTs, or robust quasi-experimental designs (e.g. interrupted time series with appropriate controls). These designs minimise bias and allow stronger causal inference.
 Moderate	The systematic review included non-randomised controlled studies or prospective/retrospective cohort studies. These designs offer useful comparative information but are more susceptible to bias than fully randomised or robust quasi-experimental designs. Certainty is moderate.
 Weak	The systematic review relied primarily on lower-rigour observational designs, including pre–post studies without control groups, cross-sectional studies, or case–control studies. These designs have substantial risk of bias and provide low certainty.

Risk of bias

Risk of bias appraisals that the reviews themselves conducted on the primary studies they included were extracted. Then one reviewer (NP) checked these for each paper while assessing the overall risk of bias of each paper using the criteria in Table 4, below, and selecting the appropriate colour rating. Where the review did not include risk of bias assessments of the studies it included, they were recorded as Not Reported (NR).

Table 4—Risk of bias appraisal of included studies

Rating	Criteria
 Low	The systematic review included studies that were mostly assessed as being at low risk of bias using a validated tool.
 Moderate	The reviews were mostly assessed as being at moderate or mostly moderate and low risk of bias using a validated tool.
 High	The systematic review included studies that were mostly assessed as being at high risk of bias or high and moderate risk of bias using a validated tool.

Data completeness

To assess the completeness and usability of dose and duration reporting across included systematic reviews, we applied a structured data completeness classification for the number of consultations and consultation duration. Completeness was assessed per systematic review, based on the level of detail provided in the review's description of the primary studies it synthesised (Table 5). This classification was applied independently for each of the dose variables to provide a consistent assessment of reporting completeness across systematic reviews.

Table 5—Data completeness categories

Completeness category	Definition	Examples
 Good	Clear, extractable quantitative information allowing a meaningful numeric range to be derived.	'4–12 weeks'; '1–12 consultations'; '20–60 minutes'.
 Poor	Incomplete information or no information reported for the variable.	'Not reported'; missing data; no mention of dose or duration.

Literature provided via stakeholder submission

All organisations listed in Appendix 5.1 received a formal email from the Department inviting them to provide relevant literature for consideration in the Evidence Check via 'stakeholder submission'. All organisations agreed to participate. Following this, the review team at the Sax Institute sent a follow-up email thanking organisations for their support, outlining the Evidence Check questions, and providing guidance on the types of literature to submit (see Appendix 5.1).

Materials received from organisations included peer-reviewed publications and grey literature, as well as stakeholder submissions and position/advocacy documents. All materials were logged on receipt and screened against the inclusion criteria in Appendix 3 by two team members (MF and NP). Author MF undertook data extraction for included evidence.

Documents meeting inclusion criteria (including eligible grey literature) were included in the evidence base for data extraction and synthesis. Documents that did not meet the inclusion criteria (e.g. position statements and narrative evidence summaries without eligible evaluative studies) were treated as stakeholder submissions. These were not included in the evidence synthesis or used to infer dose–outcome relationships. Instead, they were documented in a ‘submissions register’ for transparency and were used to: (i) identify high-level contextual issues relevant to interpretation; and/or (ii) identify potentially eligible studies cited within submissions (‘reference harvesting’), which were then screened independently against the inclusion criteria. A description of the volume of literature provided by each stakeholder, reasons for exclusion, information on any included literature plus (in some cases) other information relevant to the stakeholder group included in the Evidence Check is in Appendix 5.2.

Findings

Peer-reviewed literature

Overview of the evidence base

This Evidence Check included 108 systematic reviews reporting on allied health interventions for adults with stroke (n=75), Parkinson's disease (n=26) or diabetes (n=7). Most reviews reported on either exercise-based or multimodal interventions, with a small number focusing on other intervention types (e.g. psychological or communication-focused programs). Where provider professions were reported, physiotherapists and occupational therapists were the most frequently named allied health professionals, often working within multidisciplinary teams that included other professions such as speech pathologists, psychologists, nurses, social workers, diabetes educators, dietitians and exercise physiologists. The most commonly reported outcomes related to physical activity and function (e.g. motor impairment, balance, gait, mobility, upper-limb function), with a substantial number of reviews also assessing health-related quality of life, and a smaller number examining psychological outcomes. See Appendix 6 for a complete overview of included studies.

Strength of evidence, risk of bias assessment and data completeness

The strength of the evidence, risk of bias and data completeness for each included study is colour-coded in Appendix 7 and fully described in Supplemental file 2.

We rated the strength of evidence in each review using the study designs of the underlying primary studies, with RCTs considered stronger designs than observational or uncontrolled studies. Across the 108 systematic reviews, 104 (96%) were rated as *strong*, as they only included RCTs; one review (1%) was rated as *moderate*, because it combined RCTs with other controlled or longitudinal designs; and three reviews (3%) were rated as *weak*, because they drew primarily on weaker or less well-controlled study designs. Appendix 8 provides detailed information for each review.

We made an overall assessment of the risk of bias of the primary studies that the reviews conducted themselves. Among all 108 included reviews, 88 (81%) had appraised the majority of their included studies as being at low or moderate risk of bias. Considering each level of risk of bias, 56 (52%) had appraised the majority of their included studies as being at low risk of bias, 30 (28%) had appraised most of their included studies as being at moderate risk of bias, 16 (15%) appraised most of their included studies as being at high risk of bias and six (5%) of reviews did not include risk of bias assessments of their included studies.

We examined two dose variables: the number of consultations (i.e. total number of sessions) and consultation duration (length of each session). For number of consultations, 89/108 reviews (82%) were rated as having good completeness (i.e. providing a clear numeric range). For consultation duration, 88/108 reviews (81%) were rated as having good completeness.

Overall, 78/108 reviews (72%) were rated as having good completeness for both the number of consultations and consultation duration, and only six reviews explicitly examined dose–response relationships in their analyses.

As a result, the findings below draw on three overlapping sources of evidence:

- the subset of reviews with good completeness for both dose variables
- the six systematic reviews that explicitly examined dose–outcome relationships
- broader patterns from reviews with partial dose reporting, which are used cautiously and interpreted as descriptive rather than definitive.

Descriptive patterns in consultation dose

Across the high-completeness subset of reviews, interventions described within were most often delivered as multi-session programs by multidisciplinary allied health teams. For stroke and Parkinson’s disease, physiotherapists and occupational therapists were the most frequently identified providers, often working within multidisciplinary teams that included other professionals such as speech pathologists, exercise specialists and nurses. In the diabetes reviews, programs more often involved dietitians, psychologists, diabetes educators and other professionals providing lifestyle, self-management and psychological support alongside exercise or medical care.

Across all 78 high-completeness reviews, multimodal and exercise-based interventions were most common: 44 were coded as multimodal and 33 as primarily exercise-focused, with only one review categorised as ‘other’ intervention type. This pattern was similar in stroke and Parkinson’s disease, whereas in diabetes the high-completeness reviews were dominated by multimodal lifestyle and self-management programs.

When viewed by condition, the reviews related to stroke showed the widest spread in both number and length of consultations. Reported dose ranged from very short models with just one-to-two consultations^{16,17} to highly intensive programs offering up to 365 consultations.¹⁸ Despite these extremes, the typical midpoint in the reported ranges was about 29 consultations, with most programs falling between roughly 23 and 44 consultations.^{19–23} Session durations for stroke ranged from brief contacts of about 10–20 minutes^{24,25} to extended three-hour consultations²⁶, but the majority reported standard appointment lengths with a midpoint of about 45–60 minutes.^{27–30} These programs typically targeted gait, balance, upper-limb function and broader mobility, and were generally associated with improvements in these outcomes.

In the reviews related to Parkinson’s disease, a wide range of numbers of consultations was also reported but these tended to fall into two broad patterns. For example, some interventions, such as structured exercise or physiotherapy programs, were commonly delivered across 10–40 consultations^{31–33}, while others, particularly long-running activity or dance-based programs, reported up to 312 consultations.^{34,35} The typical midpoint in the reported ranges was about 53 consultations, with half falling between roughly 26 and 63 consultations. Session durations tended to be longer than for other conditions, ranging from 45–75 minutes^{31,34,36}, although some programs used shorter 10–20 minute sessions^{33,37} and at least one communication-focused review reported longer sessions up to 360 minutes.³⁸ Outcomes most commonly included motor function, balance, gait, functional mobility and, for communication programs, voice and speech-related measures.

In the reviews related to diabetes, the high-completeness subset described multimodal programs that combined exercise and/or dietary interventions with psychological support, lifestyle education and self-management training.^{39–42} Compared with stroke and Parkinson's disease, these programs involved fewer consultations overall. Four of the five reviews reported ranges between four and 40 consultations^{39,40,42,43}, while one review described a very long-running program with one-to-728 consultations.⁴⁴ Typically, however, the reported ranges fell between seven and 35 consultations, with a midpoint of 14 consultations. Consultation durations were more consistent than for stroke and Parkinson's disease, with almost all falling within a duration of about 45–55 minutes, and a midpoint of 52 minutes.^{39–42} These interventions were associated with improvements in glycaemic control, cardiometabolic risk factors and, in some cases, depressive symptoms or broader psychological wellbeing.

Considered together, these high-completeness reviews reveal a reasonably coherent pattern. Session lengths are broadly similar across conditions, with most programs using consultations of about 45–55 minutes, and a minority (most often for Parkinson's disease) using substantially longer sessions. By contrast, the total number of consultations varied widely both within and between conditions. On average, diabetes programs used fewer consultations, with a typical midpoint of about 14 consultations compared with 29 for stroke and 53 for Parkinson's disease. Overall, the evidence suggests allied health interventions for these chronic conditions are usually structured as multi-session programs built around broadly standard appointment lengths, but the overall volume of contact differs markedly by condition, intervention type and program design.

Relationship between dose and outcomes

Only six reviews explicitly examined dose–outcome relationships between the amount of allied health intervention provided and patient outcomes as the main aim of the study and included statistical analyses to report findings on this.^{32,36,45–48} Across these reviews, there was some suggestion that more intensive interventions were associated with better outcomes, but the evidence was inconsistent and not sufficient to define an optimal dose. All these reviews were rated as high for the strength of their evidence and all rated the majority of their included studies as being at low (n=3) or moderate (n=3) risk of bias.

In Parkinson's disease, El Hayek (2023) synthesised multimodal physiotherapy programs, typically delivered in 30–60-minute sessions (with the number of consultations not consistently reported)⁴⁵, while Foster (2021) examined interventions that integrated exercise, education and behavioural strategies delivered over approximately seven-to-96 consultations, with reported session durations of 40–60 minutes.³² Xie (2025) reported an 'optimal dose' for aerobic exercise (walking) to improve walking velocity in Parkinson's disease of up to 1400 metabolic equivalent (MET) minutes per week, which could be delivered in various numbers of sessions per week and durations per session, e.g. slower paced walking (at 3METs), seven sessions of 67 minutes per session.³⁶ However, the range of number of consultations was eight-to-96 consultations and 15–120 minutes per session. For stroke, Harvey (2022) examined higher versus lower 'doses' of speech–language therapy and related psychosocial interventions for post-stroke communication and functional outcomes, but reported dose parameters heterogeneously.⁴⁶ Vecchio (2024) synthesised multimodal stroke programs combining exercise with lifestyle education and self-management support, delivered over approximately 12–48 consultations, with limited reporting of consultation length.⁴⁷ Xu (2025) found the therapeutic effects of virtual-reality-based interventions on upper limb function in patients with stroke were influenced by

trial lengths exceeding four weeks, with more than four sessions per week and a total session time of more than 15 hours.⁴⁸ The range of consultations was 10–36, and the range of session duration was not reported.

Across these reviews, there was consistent evidence that *some* structured dose is needed, typically in the form of programs delivered several times per week over multiple weeks, using standard appointment lengths of about 30–60 minutes. For example, in chronic stroke, higher-dose dual-task and proprioceptive training regimens delivered multiple times per week over four or more weeks were associated with larger gains in gait parameters than very low-dose comparators.⁴⁷ In chronic aphasia, additional blocks of speech–language therapy appeared to produce further improvements for at least some people, suggesting that benefits do not necessarily cease after an initial treatment block.⁴⁶ Similarly, in Parkinson’s disease more comprehensive and higher-dose physical activity or dance programs tended to be more likely than brief, low-dose interventions to shift instrumental activities of daily living or participation outcomes.³²

However, when dose was examined more formally via meta-analyses, the results were mixed and often inconclusive. In the aphasia review, only a small number of trials directly compared higher and lower amounts of the *same* therapy, and results were inconsistent: higher doses sometimes indicated additional benefit, but not in a simple linear fashion, and there were indications of diminishing returns.⁴⁶ In the physiotherapy review for Parkinson’s disease, meta-regression analyses found no clear moderation of outcomes by program duration, frequency of consultations per week, or total number of consultations within the common dose band of approximately 30–60-minute consultations delivered two-to-three times per week over two-to-12 weeks.⁴⁵ This suggests differences in consultation time alone may not explain much of the variation in outcomes. Together, these six reviews suggest that greater or more intensive exposure to allied health interventions may be associated with better outcomes up to a point, but the available evidence remains too sparse and heterogeneous to define an optimal number or length of consultations.

Literature provided via stakeholder submission

Of the 16 allied health and primary care peak organisations consulted, 13 contributed grey literature (n=62) and peer-reviewed publications (n=367). Of the 429 references provided by the stakeholders, 42 peer-reviewed documents were screened for inclusion in the section above, and two grey literature documents were eligible for inclusion, one from Speech Pathology Australia⁴⁹ and one from Occupational Therapy Australia.⁵⁰ Evidence from these papers relevant to the review question is summarised below.

In 2024 the Centre of Research Excellence (CRE) in Aphasia Recovery and Rehabilitation at La Trobe University, Melbourne, published a guide on the management of aphasia, which occurs in 25%–50% of acute stroke survivors. The guide, entitled *Aphasia Rehabilitation Best Practice Statements 2024*⁴⁹, issued as a supplement to the *Australian Aphasia Rehabilitation Pathway*, provides specific therapeutic recommendations for speech and language treatment. Each statement includes the level of evidence and references to the research on which it is based. Most of the recommendations refer to therapy that is likely to be delivered in hospital or in a rehabilitation centre, which may not apply directly in this Evidence Check. However, some of the matters raised in the statement were relevant to the Evidence Check question:

- Recommendation 5.2 on therapy timing reports evidence showing treatment within one month of stroke onset was associated with the greatest mean absolute change in overall functional communication.
- Recommendation 5.3, also about therapy timing, states people with aphasia >3 months post onset of stroke should be offered intensive/high-dose speech and language therapy if they can tolerate it. This is specified as three-to-four hours per week, five days per week, for 50 hours of therapy.
- Recommendation 5.8 emphasises the importance of long-term maintenance of gains, noting evidence that approximately 80% of people with aphasia who undergo intensive language interventions do not maintain gains in the long term without ongoing treatment or support.
- Recommendation 5.10 cites evidence of benefit of speech and language therapy targeting auditory comprehension, noting that high dosage (20–50 hours), high intensity (>9 hours/week), and high frequency (four-to-five days/week) therapy is associated with the greatest gains.
- Recommendation 5.17 refers to the effectiveness of tele-rehabilitation for aphasia.
- Recommendation 5.19 states: *“For people with aphasia experiencing difficulties with coping and adjustment, suitable psychological therapies delivered with communication supports can be facilitated by a range of trained clinicians, including speech pathologists, to prevent the development of ongoing mood problems.”*

Occupational Therapy Australia has also provided evidence-based guidelines published by the Stroke Foundation of Australia and New Zealand, entitled *Living Clinical Guidelines for Stroke Management (2024)*.⁵⁰ Based on the evidence, the guidelines offer ‘strong’, ‘weak’ and ‘consensus’ recommendations. The recommendations that may be relevant to the Evidence Check question are highlighted below:

- Strong recommendation: For stroke survivors, rehabilitation should be structured to provide as much scheduled therapy (occupational therapy and physiotherapy) as possible.
- Strong recommendation: For stroke survivors, group circuit class therapy should be used to increase scheduled therapy time.
- Weak recommendation: A minimum of three hours a day of scheduled therapy (occupational therapy and physiotherapy) is recommended, ensuring at least two hours of active task practice occurs during this time.
- Strong recommendation: For stroke survivors, rehabilitation should include individually tailored exercise interventions to improve cardiorespiratory fitness.
- Strong recommendation: Community-dwelling stroke survivors who have difficulties performing daily activities should be assessed by a trained clinician. Those with confirmed difficulties in personal or extended activities of daily living should have specific therapy from a trained clinician (e.g. task-specific practice and training in the use of appropriate aids) to address these issues.
- Weak recommendation: For stroke survivors in the acute phase (up to six weeks post stroke onset), language therapy sessions (direct time on task) ranging between 30 and 45 minutes, two-to-three days per week may be provided from stroke onset to week six post stroke, with additional therapy sessions during this acute phase being unlikely to yield any further benefit to language recovery.
- Weak recommendation: For stroke survivors with chronic aphasia (>6 months post stroke onset), intensive aphasia therapy (at least 10 hours/week of therapist-led individual or group therapy for

three weeks, together with five hours or more per week of self-managed training) may be used to improve aphasia.

- Weak recommendation: Telehealth services may be used as an alternative approach to delivering rehabilitation, especially for patients who cannot access specialist rehabilitation in the community. It may also be used as an adjunct to in-person therapy. Delivering specific interventions via telehealth should only be considered for those who have demonstrated benefits.

Although few grey literature sources provided formal evaluations of different allied health care doses, they collectively provided valuable insights into how services are currently conceptualised and organised in practice. A descriptive overview of the volume of references provided by each of the stakeholders with reasons for inclusion and exclusion, plus (in some instances) other points of relevance to their profession included in the Evidence Check is provided in Appendix 5.2. Some of the documents excluded from the findings section are included in the discussion section of the report.

Common themes from the literature provided via stakeholder submission

Across the included and excluded grey literature documents, several overarching themes emerged about how allied health interventions for people with chronic conditions are currently conceptualised and delivered.

Multidisciplinary multi-session models as the norm

Stroke, aphasia and chronic disease care were consistently described as requiring input from multiple allied health professions rather than a single discipline. Physiotherapists, occupational therapists, speech pathologists, psychologists, dietitians, diabetes educators and specialist nurses were each positioned as contributing distinct expertise at different points in the care pathway. The typical model described was not a single consultation, but a block of repeated consultations over weeks or months, often involving several professions working in parallel or in sequence. In stroke and aphasia, for example, guidance emphasised high-intensity rehabilitation blocks delivered by physiotherapy, occupational therapy and speech pathology teams, while for chronic disease more broadly, the need for coordinated medical, psychological and lifestyle-focused support was highlighted.

Emphasis on sufficient intensity, timing and maintenance

Many documents stressed that people are unlikely to achieve meaningful or sustained gains with very low doses of therapy. Stroke and aphasia statements, in particular, advocated for intensive blocks of practice (for example, multiple hours of therapy per week over several weeks) and noted that therapy can remain effective even in the chronic phase, provided sufficient intensity is achieved. At the same time, several sources acknowledged that initial gains may diminish without ongoing input, highlighting the perceived importance of review, maintenance or booster sessions rather than one-off or very short episodes of care. Telehealth and hybrid models were often presented as legitimate ways to deliver this dose, especially for people who have difficulty accessing in-person specialist services.

Funding, pricing and equity shape access to dose

A further theme concerned the role of funding and pricing structures in determining the dose of allied health care that people can realistically receive. Reports addressing Medicare, NDIS and other

funding arrangements described how fee schedules, session caps and price limits influenced the number and length of consultations that services can provide. Within this broader context, some professional bodies explicitly framed dose as an equity issue, arguing current rebates and session limits restrict access to adequate psychological care and impose higher out-of-pocket costs on particular groups, including women and young people. Recommendations included increasing rebates, allowing more flexible session limits for people with complex or high-impact conditions, and strengthening safety-net arrangements for those at greatest financial risk.

Taken together, the grey literature portrays allied health care for chronic conditions as multidisciplinary, multi-session and often high intensity, while also recognising that what is actually delivered is constrained by funding models, workforce availability and access barriers. These sources strongly imply that adequate dose matters for outcomes, but they do so largely through service models, professional standards and equity arguments, rather than through formal evaluations of different numbers or lengths of consultations.

Discussion

This Evidence Check examined whether there is a relationship between allied health consultation dose, defined as the number and/or length of individual consultations, and health-related outcomes for adults with stroke, Parkinson's disease or diabetes, and whether any such relationship differs by profession or condition. Of the 108 included systematic reviews, we extracted information on study design, intervention type, allied health profession, dose variables and outcomes. We applied a pragmatic framework to rate the strength of evidence (based on the study design of underlying primary studies), provided a summary of the overall risk of bias of the primary studies that the reviews had assessed themselves and assessed the completeness of reporting for the number and duration of consultations. We also reviewed two grey literature documents from allied health peak bodies that included relationships of dose of allied health intervention with patient outcomes and considered all background documents provided by the allied health and healthcare organisations to understand how consultation dose is conceptualised in contemporary practice and policy.

A key finding is that the literature is much better at describing 'how and what allied health interventions are delivered' than at identifying a precise 'dose of intervention' that maximises outcomes. Three-quarters of the reviews provided good completeness for both number and length of consultations; however, only six reviews treated dose as a primary focus and attempted formal dose–outcome analyses.^{32,36,45–48} And even those that did were constrained by small numbers of heterogeneous trials.

The reviews with high completeness of information on the dose-to-outcome relationships suggest a relatively consistent level of allied health intervention dose across the three conditions. Interventions are almost never delivered as single or standalone consultations. Instead, they are structured as multi-session programs delivered by multidisciplinary allied health teams. Session lengths are most commonly 45–55 minutes in length. In contrast, the total number of consultations varied widely, with stroke and Parkinson's disease involving a much higher number of sessions than diabetes. This was reflected in feedback from the allied health peak organisations.

The six systematic reviews that explicitly examined dose–outcome relationships^{32,36,45–48} add nuance to the findings but reinforce the patterns found in all the peer-reviewed literature. Across these reviews, there was a consistent signal that very low doses or one-off allied health consultations were unlikely to be sufficient for meaningful change, and that programs delivered several times per week over multiple weeks using 30–60-minute sessions were more likely to change outcomes.

The grey literature told a similar story, consistently indicating that allied health chronic disease care should involve a multidisciplinary team and be delivered over multiple consultations. At the same time, these documents provided additional contextual information that indicated that the dose delivered in practice was strongly shaped by funding mechanisms, pricing structures, workforce capacity and accessibility or equity issues.

Although they did not meet the strict inclusion criteria for grey and peer-reviewed literature, some of the documents provided by stakeholders did contribute information on service time limits and session

numbers. For example, Speech Pathology Australia referenced the NDIS Annual Pricing Review, which includes case studies with service time limits.⁵¹ A peer-reviewed article provided by Dietitians Australia describing Medicare-subsidised dietetic services echoes our finding that the current cap of five sessions per calendar year is a barrier to access, particularly when shared across all allied health professions.⁵² Dietitians Australia also provided a report commissioned by Dietitians New Zealand (produced by the New Zealand Institute for Economic Research) that gives quantitative estimates of dietetic care for diabetes patients in the community accessing primary care in New Zealand. It models scenarios by disease group based on real-world data, has a narrative style section reviewing intervention impacts and effectiveness, and provides a detailed analysis of the need for and usage of public health services for cancer, diabetes and mental health. The report does not refer to the numbers of sessions required, but it does offer benchmarks for dietetic service use by people with diabetes. Speech Pathology Australia produced an information sheet, *Speech pathology assessments and reports*⁵³, which provided guidance on, *inter alia*, the distinction between screening and formal or diagnostic assessments. An assessment might take on average 30–60 minutes, but could take more than an hour and in some instances up to three hours. Speech and language screening assessments are generally conducted at least three months apart but may be needed more frequently.

Stakeholder submissions and related documents from peak allied health organisations consistently highlighted structural factors that shape ‘dose’ in practice. These included perceived misalignment between some MBS item descriptors and typical clinical delivery (e.g. longer initial assessments and shorter follow-ups) than implied by a single short descriptor, and the fact that the annual session cap is shared across professions, reducing the number of sessions available for any one discipline. Submissions also emphasised that funding and out-of-pocket costs can materially constrain the dose that people can feasibly receive, with implications for equity of access.

Taken together, the peer-reviewed systematic reviews and grey literature do not provide sufficient evidence to recommend a specific number or length of individual consultations as ‘optimal’ for stroke, Parkinson’s disease or diabetes. Instead, they suggest a higher cap on annual visits is needed and that this varies by condition with Parkinson’s disease and stroke requiring high session numbers that need a broader system-level approach to ensure sufficient patient support across the continuity of care during the early and latter stages of both conditions. As mentioned in the stroke management guidelines provided by Occupational Therapy Australia, group sessions may be a more cost-effective means of extending the total session numbers.⁵⁰

This Evidence Check was commissioned shortly after the Department commissioned a qualitative research project which addressed similar questions related to one-to-one allied health service provision including what the number of sessions per calendar year should be, questions about session length, and service models. The research involved interviews with eligible peak allied health and healthcare bodies, plus online forums with service providers and with patients experiencing treatment for relevant chronic conditions. Our Evidence Check team delayed our reading of the qualitative research report⁵⁴ until a final draft of our report was almost complete to avoid biasing our findings. Some of the key findings of this Evidence Check were consistent with the findings of the qualitative research. For instance, the number of individual sessions required to achieve outcomes in the peer-reviewed literature in this Evidence Check was greater than the current limit of five per calendar year and varied by condition. From consultations with the peak organisations, we found multidisciplinary multi-session care is the norm, particularly for patients with co-morbidities, which was a finding related to the number of individual services in both pieces of research that provides further

rationale for the current number of individual services per calendar year being inadequate to achieve outcomes for patients with chronic conditions.

On service length, the qualitative research report⁵⁴ stated that “*Most allied health professionals are already providing CCM sessions beyond the 20-minute duration (typically 40–60 minutes)*”, while this Evidence Check found the session lengths in studies with complete data (about three-quarters of all included studies) were typically 45–55 minutes and from the six studies that had a primary aim of exploring the dose-to-outcome relationships the typical session times were 30–60 minutes. The qualitative research report explores approaches to service provision including options for increasing the number of sessions either by increasing limits per calendar year or by taking a flexible patient-centred approach, plus approaches to session lengths including a time-tiered model with 20-, 40- and 60-minute sessions and longer initial and shorter follow-up consultations. This is extended to exploring multidisciplinary and patient-affirming models of care with comparisons to different existing models (e.g. NDIS, DVA and eating disorders care plans) as well as existing models applied to specific conditions.

Strengths and limitations

Key strengths of this Evidence Check include its breadth of scope across three major chronic conditions and multiple allied health professions. The use of explicit and transparent frameworks to classify strength and quality of evidence as well as dose completeness, which found high proportions of included studies provided strong evidence, low risk of bias and high data completeness, adds confidence to the overall findings from the peer-reviewed literature. The stakeholder consultations added to the comprehensiveness of the literature considered and the integration of peer-reviewed and grey literature added depth to the findings and reduced publication bias.

Nonetheless, several limitations mean findings should be interpreted with caution. First, even where dose variables were reported with sufficient detail to be classified as ‘good’, they were often presented as broad ranges across heterogeneous interventions and populations, with limited standardisation of how dose was defined or summarised. While a reasonable proportion of studies did report a measure of central location for these ranges—such as a mean/median with standard deviations—reporting only a proportion of these with no assessment of whether outliers made reporting a median more appropriate would have complicated (and potentially biased) the findings; therefore we did not attempt to do this. Only six reviews undertook formal analyses of dose–outcome relationships, and these were based on small numbers of trials with differing designs and outcome measures, limiting the ability to make any firm conclusions on dose–outcome relationships. While the data on length of initial and follow-up sessions was extracted, it was not reported in most studies, so we did not include it.

Second, provider and setting information were variably reported, requiring pragmatic assumptions about which professions were involved and whether interventions could be delivered in community or ambulatory settings (e.g. whether it was delivered in a clinical, hospital, research facility, home or community-based environment). In certain studies, it was not always clear whether the intervention was delivered to individuals or groups. If there was an indication that the intervention was most likely delivered in a group setting (e.g. group therapy or group-based educational consultations), it was

excluded from the analysis. This decision was made to maintain consistency and to focus on interventions that are more likely to be individually tailored or designed for one-on-one engagement.

Furthermore, in interpreting these findings, it is important to note that we did not independently appraise all 108 systematic reviews using a tool such as AMSTAR 2.⁵⁵ Instead, we considered the study designs included within each review as an indicator of strength of evidence, supplemented by the risk of bias assessments of the primary studies the review authors conducted themselves. While we endeavoured to provide a consistent summary of the authors' approaches to provide a pragmatic gauge of the overall evidence quality across a large body of reviews, it may introduce variability because of differences in how individual reviews applied their appraisal methods. While most of the primary studies were assessed as being at low or moderate risk of bias, bias could have been introduced by the reviews themselves not taking steps to reduce the risk of bias (e.g. publishing a protocol a-priori or having two reviewers independently screen papers for inclusion). However, most reviews did state in the methods that the PRISMA guidelines⁵⁶ for reporting systematic reviews and meta-analyses were followed for reporting, which implies that many of these critical steps to reduce bias would have been completed.

While this Evidence Check attempted to provide good coverage of interventions delivered by the full range of allied health and healthcare professions by not limiting the study designs included within reviews beyond quantitative studies with prospective designs, this resulted in a large volume of reviews for inclusion, which necessitated splitting it into two phases to deliver some results to the Department within the agreed timelines. This likely decreased the professions represented in Phase 1, since the only included chronic conditions were stroke, Parkinson's disease and diabetes. However, the coverage of professions will likely increase in Phase 2 as different chronic conditions are included. A notable gap in Phase 1 is that there were no interventions delivered by podiatrists even though diabetes was an included condition. As mentioned in the introduction, physiotherapy and podiatry have had the highest uptake of the allied health Chronic Condition Management (CCM) services, particularly for those aged 80–84 with diabetes, more severe physical limitations and from low socioeconomic status backgrounds.^{6–8}

Finally, the grey literature synthesis drew on a targeted profession-focused sample of documents that, while informative about practice and policy context, were predominantly advocacy-oriented and not designed to provide effect estimates. For this reason, similarly strict inclusion criteria to the peer-reviewed literature were applied to the grey literature, which stipulated findings on the dose–outcome relationships must be included and that they also must include some assessment of the strength and/or quality of included studies. However, the informative context was retained in high-level thematic findings and woven into the discussion.

In summary, this Evidence Check provides a structured overview of how allied health consultation dose is currently reported and configured in the literature for stroke, Parkinson's disease and diabetes, and clarifies what the existing evidence can, and cannot, say about relationships between dose and outcomes.

Considerations

Several clear themes emerged in this Evidence Check that should be taken into consideration when determining whether the current MBS-funded allied health chronic condition management services are appropriately structured to support improved patient outcomes. We have presented these as considerations below:

1. Increase the cap on Medicare-subsidised allied health sessions:
 - The current limit of five sessions per year under MBS Chronic Condition Management items is insufficient for clinically meaningful outcomes for people with stroke, Parkinson's disease and diabetes
 - Evidence shows effective allied health interventions for stroke and Parkinson's disease often require multi-session blocks (e.g. 29 sessions for stroke, 53 for Parkinson's disease), while diabetes programs typically require fewer sessions (e.g. 14 sessions).
 - A solution might be to implement condition-specific caps or flexible models that allow higher session numbers for people with more complex long-term conditions.
2. Review consultation length:
 - Most effective interventions use consultations of 45–55 minutes; very short sessions (<20 minutes) are rarely sufficient
 - Align MBS item descriptors with standard clinical practice (45–60 minutes) and consider differential rebates for longer initial assessments.
3. Support multidisciplinary multi-session care:
 - Outcomes improve when care is delivered by multidisciplinary teams (audiologists, chiropractors, podiatrists, physiotherapists, occupational therapists, social workers, speech pathologists, dietitians, diabetes educators, exercise physiologists, psychologists, for instance)
 - Review MBS allied health items so that they do not restrict access across professions and consider separate caps per profession rather than a shared pool.
4. Enable a flexible approach to facilitate intensive and ongoing therapy for some neurological conditions:
 - For people with stroke and aphasia, intensive blocks (e.g. 3–4 hours/week, 5 days/week for ≥ 50 hours) are associated with better outcomes.

Appendices

Appendix 1—Search terms

PICO element	Description that guided search terms and syntax
Population	Community-dwelling adults and children* experiencing one or more chronic conditions (from the eligibility for Medicare-subsidised GPMP and TCA) on a Chronic Disease Management Plan (CDMP). Relevant chronic conditions in the Phase 1 Evidence Check for this project are: • Diabetes (Types 1 and 2) • Stroke (post/sub-acute and chronic) • Parkinson's disease *Children may be experiencing Type I Diabetes
Intervention	An individual allied health service from the following professions: • Aboriginal health worker / Torres Strait Islander health practitioner • Audiologist • Chiropractor • Diabetes educator • Dietitian • Exercise physiologist • Mental health nurse • Occupational therapist • Osteopath • Physiotherapist • Podiatrist • Psychologist • Social worker • Speech pathologist Where available, reviewers should also extract information about delivery and implementation details, including: • Setting/location • Frequency of consultations (e.g. weekly, monthly) • Duration of the treatment course (e.g. number of weeks or months) • Intensity of the intervention (e.g. length of each consultation).
Comparator	• Where available, comparisons against usual care, alternative therapies, placebo, or no intervention.
Outcomes	• Primary and secondary outcomes for interventions delivered to the chronic conditions, above.

Appendix 2—Search strings and outputs

Summary of the three database search dates and yields

Search dates: 19/08/25 for MEDLINE and Embase and 12/08/25 for Cochrane Database of Systematic Reviews (CDSR)

Yields: MEDLINE = 918, Embase 944, CDSR 26.

SEARCH INPUTS

DATABASE 1: Ovid MEDLINE(R) ALL, August 19, 2025

Results = 918

- | | | |
|----|--|---------|
| 1 | exp "Back Pain"/ | 48280 |
| 2 | "arthritis"/ or exp "arthritis, experimental"/ or "arthritis, rheumatoid"/ or "osteoarthritis"/ | 191037 |
| 3 | exp "Pulmonary Disease, Chronic Obstructive"/ | 73078 |
| 4 | exp "Asthma"/ | 149576 |
| 5 | exp "Hypertension"/ | 333488 |
| 6 | exp "Hyperlipidemias"/ | 72913 |
| 7 | exp "Osteoporosis"/ | 67736 |
| 8 | exp "Bronchiectasis"/ | 10884 |
| 9 | exp "Stroke"/ | 193371 |
| 10 | exp "Parkinson's disease"/ | 91320 |
| 11 | ("Coronary* disease*" or "heart failure*" or "asthma*" or "Chronic obstructive pulmonary disease*" or "COPD" or "diabet*" or "arthritis*" or "hypertension*" or "hyperlipidemias*" or "osteoporosis*" or "bronchiectasis*" or "stroke*" or "parkinson's disease" or "back pain*").tw,kw. | 2541190 |
| 12 | 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 11 | 2849572 |
| 13 | exp "Allied Health Personnel"/ | 56630 |
| 14 | "Aboriginal health worker".tw. | 47 |
| 15 | exp "Chiropractic"/ | 3572 |
| 16 | exp "nutritionists"/ or exp "occupational therapists"/ or exp "physical therapists"/ | 6955 |
| 17 | exp "exercise therapy"/ | 71845 |
| 18 | exp "Speech-Language Pathology"/ | 4194 |

- 19 exp "Manipulation, Osteopathic"/ or exp "Osteopathic Medicine"/ 4553
- 20 exp "Podiatry"/ 2502
- 21 exp "Psychologist"/ 34
- 22 ("Aboriginal Health Worker*" or "Aboriginal and Torres Strait Islander Health*" or "Chiropractor*" or "Diabetes Educator*" or "Dietitian*" or "Exercise Physiologist*" or "Occupational Therapist*" or "Osteopath*" or "Physiotherapist*" or "Podiatrist*" or "Psychologist*" or "Speech Pathologist*").tw,kw. 63044
- 23 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 22201273
- 24 12 and 23 28991
- 25 limit 24 to english language [Limit not valid in CDSR; records were retained] 26527
- 26 limit 25 to yr="2020 -Current" 7655
- 27 (((("systematic review" or "systematic literature review" or "systematic scoping review" or "systematic evidence review" or "systematic quantitative review" or "systematic meta-review" or "systematic critical review" or "systematic mixed studies review" or "systematic mapping review" or "systematic cochrane review" or "systematic search") and review) or "systematic integrative review").ti. not comment.pt. not (protocol or protocols).ti. 292521
- 28 "meta analysis*".mp. or exp "Meta-Analysis"/ 347371
- 29 27 or 28 490774
- 30 "animal"/ 7715853
- 31 "human"/ 22888707
- 32 31 not 30 20502870
- 33 26 and 29 and 32 920
- 34 remove duplicates from 33 **918**

DATABASE 2: Embase Classic+Embase, August 19, 2025**Results: 944**

- 1 exp coronary artery disease/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 53625
- 2 exp asthma/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 25653
- 3 exp lung disease/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 169039
- 4 exp chronic obstructive lung disease/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 18151
- 5 exp diabetes mellitus/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 87155
- 6 exp insulin dependent diabetes mellitus/ or exp non insulin dependent diabetes mellitus/ 551391
- 7 exp arthritis/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 41862
- 8 spinal osteoarthritis/ or exp knee osteoarthritis/ or exp hip osteoarthritis/ or exp hand osteoarthritis/ or exp "Western Ontario and McMaster Universities Osteoarthritis Index"/ or exp osteoarthritis/ 204549
- 9 exp spinal osteoarthritis/ or exp knee osteoarthritis/ or exp hip osteoarthritis/ or exp hand osteoarthritis/ or exp osteoarthritis/ 201709
- 10 exp hypertension/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 42520
- 11 exp hyperlipidemia/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 10766
- 12 exp parkinson's disease/dm, pc, rh, th [Disease Management, Prevention, Rehabilitation, Therapy] 17224
- 13 ("Coronary* disease*" or "heart failure*" or "asthma*" or "Chronic obstructive pulmonary disease*" or "COPD" or "diabet*" or "arthritis*" or "hypertension*" or "hyperlipidemias*" or "osteoporosis*" or "bronchiectasis*" or stroke* or "back pain*" or "parkinson's disease").tw,kw. 4093961
- 14 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 11 or 13 4507474
- 15 exp paramedical personnel/ 703047
- 16 "Aboriginal health worker".tw,kw. 71
- 17 exp chiropractic/ 6051
- 18 exp dietitian/ 23924

19	exp occupational therapy/	34565
20	exp physiotherapist/	38823
21	exp exercise physiology/	1814
22	exp kinesiotherapy/	129239
23	speech therapy/20048	
24	exp podiatry/	3638
25	osteopathic medicine/	6235
26	exp psychologist/	23892
27	("Aboriginal Health Worker*" or "Aboriginal and Torres Strait Islander Health*" or "Chiropractor*" or "Diabetes Educator*" or "Dietitian*" or "Exercise Physiologist*" or "Occupational Therapist*" or "Osteopath*" or "Physiotherapist*" or "Podiatrist*" or "Psychologist" or "Speech Pathologist*").tw,kw.	
28	15 or 16 or 17 or 18 or 19 or 20 or 23 or 24 or 25 or 27	800512
29	limit 28 to (english language and yr="2020 -Current")	209393
30	(((("systematic review" or "systematic literature review" or "systematic scoping review" or "systematic evidence review" or "systematic quantitative review" or "systematic meta-review" or "systematic critical review" or "systematic mixed studies review" or "systematic mapping review" or "systematic cochrane review" or "systematic search") and review) or "systematic integrative review").ti. not comment.pt. not (protocol or protocols).ti.	
31	"meta analysis*".mp. or exp "Meta-Analysis"/	513236
32	30 or 31	668803
33	14 and 29 and 32	944

DATABASE 3: Cochrane Database of Systematic Reviews, August 12, 2025**Results:** 26

ID	Search Hits
#1	[mh "Back Pain"] 7894
#2	[mh ^arthritis] OR [mh "arthritis, experimental"] OR [mh ^"arthritis, rheumatoid"] OR [mh ^osteoarthritis] 13913
#3	[mh "Pulmonary Disease, Chronic Obstructive"] 8131
#4	[mh Asthma] 14707
#5	[mh Hypertension] 25423
#6	[mh Hyperlipidemias] 7973
#7	[mh Osteoporosis] 5531
#8	[mh Bronchiectasis] 500
#9	[mh Stroke] 18293
#10	((Coronary* NEXT disease*):ti,ab,kw OR ("heart" NEXT failure*):ti,ab,kw OR asthma*:ti,ab,kw OR ("Chronic obstructive pulmonary" NEXT disease*):ti,ab,kw OR COPD:ti,ab,kw OR diabet*:ti,ab,kw OR arthritis*:ti,ab,kw OR hypertension*:ti,ab,kw OR hyperlipidemias*:ti,ab,kw OR osteoporosis*:ti,ab,kw OR bronchiectasis*:ti,ab,kw OR stroke*:ti,ab,kw OR ("back" NEXT pain*):ti,ab,kw) 406357
#11	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 416067
#12	[mh "Allied Health Personnel"] 1833
#13	"Aboriginal health worker":ti,ab 6
#14	[mh Chiropractic] 197
#15	[mh nutritionists] OR [mh "occupational therapists"] OR [mh "physical therapists"] 384
#16	[mh "exercise therapy"] 23123
#17	[mh "Speech-Language Pathology"] 127
#18	[mh "Manipulation, Osteopathic"] OR [mh "Osteopathic Medicine"] 257
#19	[mh Podiatry] 51
#20	((("Aboriginal Health" NEXT Worker*):ti,ab,kw OR ("Aboriginal and Torres Strait Islander" NEXT Health*):ti,ab,kw OR Chiropractor*:ti,ab,kw OR ("Diabetes" NEXT Educator*):ti,ab,kw OR Dietitian*:ti,ab,kw OR ("Exercise" NEXT Physiologist*):ti,ab,kw OR ("Occupational" NEXT Therapist*):ti,ab,kw OR Osteopath*:ti,ab,kw OR Physiotherapist*:ti,ab,kw OR Podiatrist*:ti,ab,kw OR ("Speech" NEXT Pathologist*):ti,ab,kw) 15872

#21 #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 with Cochrane Library publication date Between Jan 2020 and Aug 2025, in Cochrane Reviews 78

#22 (((("systematic review":ti OR "systematic literature review":ti OR "systematic scoping review":ti OR "systematic narrative review":ti OR "systematic qualitative review":ti OR "systematic evidence review":ti OR "systematic quantitative review":ti OR "systematic meta-review":ti OR "systematic critical review":ti OR "systematic mixed studies review":ti OR "systematic mapping review":ti OR "systematic cochrane review":ti OR "systematic search":ti) AND review:ti) OR "systematic integrative review":ti) NOT comment:pt NOT (protocol:ti OR protocols:ti) 631

#23 ("meta" NEXT analysis*):ti,ab,kw OR [mh "Meta-Analysis"] 21492

#24 #22 OR #23 21617

#25 [mh ^animal] 17044

#26 [mh ^human] 899417

#27 #26 NOT #25 883674

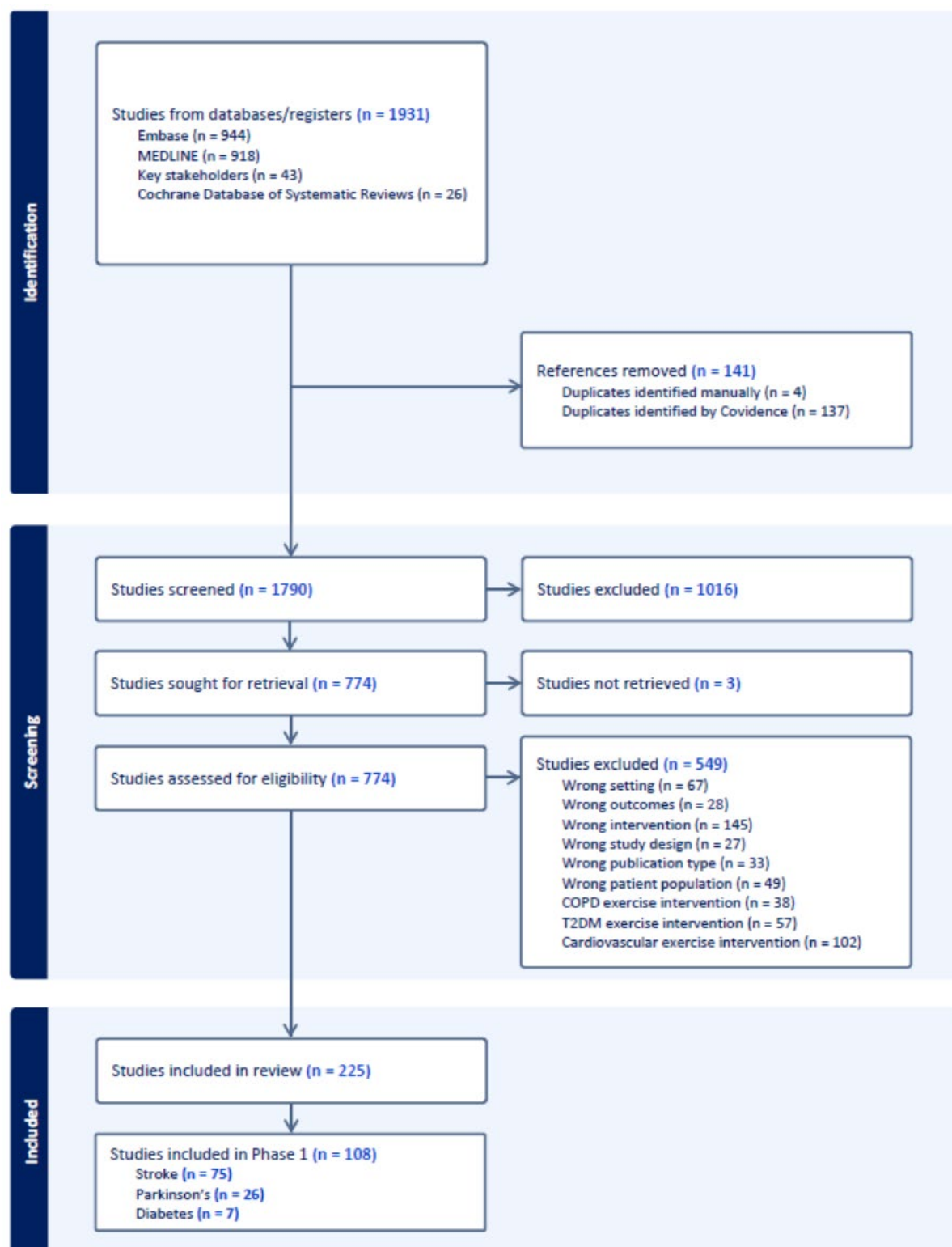
#28 #21 AND #24 AND #27 **26**

Appendix 3—Inclusion and exclusion criteria

Population	
Include	Exclude
- Intervention population living in community receiving treatment from allied health <u>and</u> <u>Aboriginal and Torres Strait Islander Primary healthcare</u> professionals listed below for one or more of the following chronic conditions: - Stroke - Diabetes (T1DM and T2DM) - Parkinson's disease.	- Children (unless T1 DM) - Adults living in residential aged care or children living in specialised care facilities - Currently admitted to hospital - If receiving treatment (i.e. not comparator), they will be excluded if the main treatment condition is other than the list of five included for adults (see opposite) and asthma or Type 1 diabetes mellitus for children - Specific populations (e.g. athletes).
Intervention/exposure	
Include	Exclude
- An intervention that was or could be delivered by an appropriately credentialled allied health <u>or</u> <u>Aboriginal and Torres Strait Islander Primary healthcare</u> professional - Individual therapy—face to face or online - An intervention delivered by an allied health <u>or</u> <u>Aboriginal and Torres Strait Islander Primary healthcare</u> professional who was eligible to provide Medicare-subsidised services for people with chronic conditions (as listed above in POPULATION) in Australia, such as: - Aboriginal and Torres Strait Islander health worker / Aboriginal and Torres Strait Islander health practitioner - Chiropractor - Diabetes educator - Dietitian - Exercise physiologist - Mental health nurse - Occupational therapist - Osteopath - Physiotherapist - Podiatrist - Psychologist - Social worker - Speech pathologist - Exercise therapy even if not specified exactly who delivers it.	- An intervention provided in an inpatient setting - A home-based program - Group therapy (exclude even if unclear but most likely delivered in group setting) - An intervention or comparator provided by a pharmacist (because these are funded by different schemes in Australia) - An intervention or comparator provided by a psychologist, where the intervention is not related to treatment of one of the three conditions listed above. - An exercise intervention for cardiovascular disease (CVD) (hypertension, coronary heart disease and heart failure) - An exercise intervention for chronic obstructive pulmonary disease (COPD) - An exercise intervention for T2DM - Experimental or early-stage interventions such as pilot studies or feasibility studies of innovative new approaches.
Comparator/context	
Include	Exclude
Where available, comparisons against usual care, alternative therapies, placebo, or no intervention	

Any comparator, including group therapy.	
Outcome	
Include	Exclude
- Primary outcomes related to allied health treatment for chronic conditions listed above - Reports on intervention dosage in detail: i.e. number of consultations / total duration (needs to be reported in >50% of included studies).	- Outcomes related to other chronic conditions that are not specified under the population - Where the other chronic conditions are co-morbidities with included chronic conditions, the included chronic conditions and related outcomes must be the focus of the study.
Study characteristics	
Include	Exclude
- Systematic reviews and meta-analyses that include quantitative studies with prospective designs in the first instance - Systematic reviews where >50% of included studies meet the above criteria.	- Systematic reviews where <50% of included studies meet the above criteria, or where it is unclear whether >50% meet the above criteria - Systematic reviews only including cross-sectional or qualitative studies - Systematic review protocols - Cross-sectional studies - Qualitative studies.
Other	
Include	Exclude
- English - For SRs include all unless there are few primary studies from countries with primary care systems like Australia's 2020 onward.	- Languages other than English - All other countries - Prior to 2020.

Appendix 4—Flow of peer-reviewed literature



Appendix 5.1—Allied health organisations

Invited organisations

Allied health professions and primary healthcare-specific organisations

Audiology Australia

Australian Association of Psychology

Australian Association of Social Workers

Australian Chiropractors Association

Australian College of Mental Health Nurses

Australian Diabetes Educators Association

Australian Physiotherapy Association

Australian Podiatry Association

Australian Psychological Society

Chiropractic Australia

Dietitians Australia

Exercise and Sports Science Australia

National Association of Aboriginal and Torres Strait Islander Health Workers and Practitioners

Occupational Therapy Australia

Osteopathy Australia

Speech Pathology Australia

Communication

An email was sent from members of the Evidence Check team from the Sax Institute, which thanked the key contacts from the above organisations for agreeing to contribute, outlined the Evidence Check questions and provided the following guidance as to what literature to contribute:

1. For both **peer-reviewed** and **grey literature**, we are seeking studies that meet the following criteria:

- Reviews or primary studies which report on quantitative experimental or quasi-experimental designs examining the effect of individual treatment (i.e. not group therapy as a previously commissioned umbrella review is informing this element)

- The treatment is within the scope of practice of the allied health professions listed in Appendix 3.
- Include data/findings on the number and/or length of treatment consultations
- Are published from 2020 onwards (will make exceptions to these criteria if you think it is a particularly important paper and explain why)
- Report on treatment outcomes for the following chronic conditions*:

For adults in primary care settings:

1. Chronic respiratory diseases (COPD, bronchiectasis, asthma)
2. Cardiovascular diseases (hypertension, coronary heart disease, heart failure)
3. Stroke
4. Diabetes (Type 1 and Type 2)
5. Musculoskeletal conditions (osteoarthritis, back pain)
6. Parkinson's disease

For children in primary care settings:

- Chronic conditions including asthma and/or Type 1 diabetes mellitus

*Please note that for the purposes of the Evidence Check rapid review, it has been necessary to limit the in-scope chronic conditions to ensure it remains feasible within the project budget and timelines. These have been selected to provide good coverage of common chronic conditions and associated allied health providers for individual services. Selection was informed by MBS service counts by provider profession, the most prevalent chronic conditions as described in the 2022 National Health Survey, and the umbrella review of group therapy services.

2. **Peer-reviewed literature** may include:

- Systematic reviews and meta-analyses
- Intervention studies using experimental or quasi-experimental designs, such as:
 - Randomised controlled trials (RCTs)
 - Natural experiments
 - Cohort studies
 - Controlled trials

3. **Grey literature from reputable sources** may include:

- Unpublished intervention evaluations*
- Treatment guidelines**
- Position statements and recommendations**
- Any documents that include information about the number and length of treatment consultations for the chronic conditions listed above***
- Reports on treatment data.***

*The same quantitative study designs and other inclusion criteria as for peer-reviewed literature apply

**Only where it is clearly evident they have been assessed and graded for the level of evidence (NHMRC hierarchy) and that the evidence has been quality-appraised

***Such evidence from practice will only be considered for use as context in the introduction and/or discussion sections of the report.

Appendix 5.2—Overview of literature provided via stakeholder submissions

This appendix provides a descriptive summary of the volume and type of literature provided by each stakeholder, their reasons for exclusion, the number included and in some instances information about studies from other sources (e.g. database searches) that is relevant to that professional group.

Audiology Australia provided a brief response to the Evidence Check questions, which was referenced. In total, the document included 11 studies that were screened, yet none met the inclusion for Phase 1, more than half (n=6) because of the inclusion of the wrong patient population for Phase 1. Of those with the correct patient population for Phase 1, three had the wrong study design. The relevant references will be considered in Phase 2.

The Australian Association of Social Workers provided a brief response to the Evidence Check questions, which included 121 references. From the peer-reviewed references, 11 were screened in Covidence and from the grey literature, three were screened for inclusion. No grey literature met the inclusion criteria.

The Australian Chiropractors Association and Chiropractic Australia prepared a targeted research brief, focusing on chiropractic treatment and patient management of musculoskeletal conditions and including 45 references, one of which was screened in Covidence.

The Australian College of Mental Health Nurses provided two pieces of grey literature including a submission letter and a position paper on men's suicide. Although mental health is not an included condition in either Phase 1 or Phase 2 of the Evidence Check, it is acknowledged that mental health conditions are some of the most prevalent chronic conditions in Australia and they often co-occur with other chronic conditions

The Australian Diabetes Educator Association provided 15 references. Two peer-reviewed papers were sent to Covidence for further screening and one piece of grey literature from the Australian Institute of Health and Welfare website was considered as background information in the introduction. Of the seven included peer-reviewed studies where diabetes was the chronic condition being treated, three included therapies that could be delivered by diabetes educators/dietitians.^{41–43}

The Australian Physiotherapy Association contributed 58 references for consideration, of which seven peer-reviewed articles were imported to Covidence for further screening, and one was considered in the grey literature. Notably, there was a predominance of exercise/physical therapy-based interventions included in the Evidence Check and 95 of these had a lead profession type of physiotherapist or exercise physiologist.

The Australian Podiatry Association provided 13 peer-reviewed references and no grey literature. One systematic review was sent to Covidence for further screening. Although it is noted in the introduction to the report that podiatry services related to diabetic neuropathy are one of the most common claims under MBS chronic condition management plans, it is surprising that no references for interventions where podiatry was the lead allied health profession delivering the intervention were included. This is listed as a limitation in this Phase 1 Evidence Check.

The Australian Psychological Society provided 19 references, of which six peer-reviewed papers were imported to Covidence and screened for inclusion. Although two of three grey literature references were for the correct chronic condition for Phase 1, and one focused on young adults and all chronic illness, they were excluded as they did not consider the strength or quality of included supporting evidence. It is acknowledged that mental health conditions are some of the most prevalent chronic conditions in Australia and they often co-occur with other chronic conditions. We encourage the MBS PHC team to consider these documents and other mental-health-related. It is notable that of the seven included articles on diabetes, psychologists were the lead profession in three.^{39,41,43}

Dietitians Australia provided a list of 25 references and a recommendation that the Sax Institute search for specific authors' papers. Two grey literature documents were included in the discussion section of the report.^{52,57} Notable inclusions where dietitians were involved in intervention delivery in the peer-reviewed literature were a meta-analysis, *Effectiveness of dietetic intervention for people with type 2 diabetes*, by Siopsis and colleagues from 2021⁴² and two reviews of multidisciplinary interventions by Racey and colleagues.^{41,43} The specific author-name-search was not included in the search strategy for the Sax Institute since the requested delay of the consultations with peak allied health organisations made this impractical within the time frame of the Evidence Check.

Exercise and Sports Science Australia provided a letter with summary recommendations of an overview of why current MBS models for chronic disease management are failing and a summary of evidence of effect of exercise and sports science interventions on outcomes for relevant conditions and a total of 32 references for consideration. Three of these were systematic reviews, which were imported to Covidence for screening. It should be noted that there was a predominance of exercise-based interventions included in the Evidence Check and 95 of these had a lead profession type of physiotherapist or exercise physiologist.

Occupational Therapy Australia provided 22 references to literature to support the Evidence Check of MBS-funded allied health chronic condition management services. Of these, five peer-reviewed publications were imported to Covidence for further screening and two grey literature references were screened, one of which is described in the findings for grey literature.⁵⁰ Occupational therapists were also included as one of the allied health professionals who could have delivered the intervention in 28 included peer-reviewed papers.

Osteopathy Australia provided 41 references for consideration in the Evidence Check and four were imported into Covidence, two related to conditions relevant to Phase 1 and two were relevant to Phase 2. The latter will be considered in the Phase 2 report.

Speech Pathology Australia provided an 'evidence listing' summary by chronic conditions relevant to Phase 1 and Phase 2 of the Evidence Check. The preface to this highlighted some important caveats to consider (integrate in discussion). SPA also provided an evidence briefing. In total, these included 25 references, of which one peer-reviewed paper was sent to Covidence for further screening for inclusion and one grey literature document was screened for inclusion in the grey literature. The *Best Practice Statements* for aphasia⁴⁹ met the inclusion criteria for grey literature and the document is described in the findings below. In addition, three papers included in the peer-reviewed literature have speech pathologists leading the intervention.^{58–60} The background in the briefing was considered in the discussion and the speech pathology assessments and reports document was included in the discussion.

Appendix 6—Study details and outcomes

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
Studies examining dose-outcome relationship(s) as a main aim or via their analysis						
El Hayek 2023 ⁴⁵	To evaluate current evidence on the types, timing, frequency, duration and outcomes of physical therapy regimens applied for Parkinson's disease.	Parkinson	Physiotherapist	Multimodal	4–120 consultations / 30–60 mins	Physical: Meta-analysis showed no significant difference for Physical Therapy (PT) vs no intervention in Unified Parkinson's Disease Rating Scale (UPDRS) scores (standardised mean difference [SMD], –1.09; 95% CI, –2.50 to 0.33) or for nonstandard PT vs standard PT in measures of gait (SMD, 0.03; 95% CI, –0.53 to 0.59), balance (SMD, 0.54; 95% CI, –0.03 to 1.12), and UPDRS score (SMD, –0.49; 95% CI, –1.04 to 0.06). Meta-analytic regression of moderators revealed no significant differences in outcomes by frequency of PT per week (SMD, 0.17; 95% CI, –0.03 to 0.36).
Foster 2021 ³²	To systematically review the evidence for the effectiveness of occupational therapy interventions to improve or maintain instrumental activities of daily living (IADL) function in adults with Parkinson's disease (PD).	Parkinson	Physiotherapist; occupational therapist	Multimodal	4–104 consultations / 30–90 mins	Physical: Physical activity interventions significantly improved physical activity levels in most studies (e.g. ParkFit diary-based increase of 30%, $p < .001$), and tango dance classes led to a 5.9% improvement in IADL participation ($p = .006$). Functional: Handwriting training produced moderate improvements in writing amplitude (effect size $d \approx 0.32$) and reduced perceived difficulty (OR = 0.55, $p = .02$). Medication adherence therapy showed strong effects, with 64.8% vs 26.3% improvement at 7 weeks (OR = 6.1, $p < .001$). In contrast, cognitive rehabilitation and individualised OT interventions had low or inconsistent effects on Instrumental Activities of Daily Living (IADL) performance, though individualised OT improved participation. Overall, higher-dose interventions (≥ 8 consultations over ≥ 10 weeks) and those incorporating behavioural strategies or social engagement yielded the most robust outcomes.
Harvey 2022 ⁴⁶	The primary aim of this review was to examine the current evidence for dose effects in behavioural post-stroke aphasia interventions by meta-analysing data from experimental studies that directly compare different amounts of the same intervention. Specifically, the study aimed to answer four questions: 1) Does a larger dose of intervention result in better language and communication outcomes for people with aphasia following stroke? 2) Does time post stroke impact dose effects? 3) Are there specific person-level characteristics that help explain variability in dose-response relationships? 4) Is there evidence of dose effects in specific language or communication interventions?	Stroke	Not reported	Multimodal	Not reported / not reported	Functional: Higher doses can improve outcomes in chronic aphasia: 31 hours vs 4.5 hours significantly improved ANELT scores (Cohen's $d = 0.58$, $p = 0.0004$), while doubling dose in other studies (48 vs 24 hours) showed no added benefit ($F(3,78) = 0.80$, NS). Acute-phase studies found no dose effect, and single-case naming studies showed gains with high consultation doses but no clear optimal dose. Increased dose may help, with diminishing returns and variability by severity and timing; meta-analysis was inconclusive due to limited comparable data.
Vecchio 2024 ⁴⁷	This systematic review aimed to assess the impact and analyse the effectiveness of proprioceptive training strategies with dual-task exercises on gait in people with chronic stroke.	Stroke	Not reported	Multimodal	12–48 consultations / 30–60 mins	Physical: Gait speed increased; cadence increased; stride time decreased; stride length increased; step length increased; single limb support time improved for affected side and both paretic and non-paretic legs. Functional: Motor performance improved; balance improved; timed up and go (TUG) test improved; Berg Balance Scale (BBS) improved; 10 metre walk test (10 MWT) improved. The best effects were observed with training three times a week for four

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
						weeks, with each consultation lasting 30 minutes, focusing on speed, cadence, stride length and step length.
Xie 2025 ³⁶	To examine the dose-response relationship between specific types of exercise for improving walking velocity in Parkinson's disease (PD) using a systematic review and network meta-analysis approach, using advanced techniques including model-based dose-response network meta-analysis within a Bayesian framework, and to provide evidence-based insights that can inform exercise guidelines for managing motor symptoms in PD.	Parkinson	Not reported	Exercise	8–96 consultations / 15–120 mins	Physical: Walking velocity improved with various exercise types: Aerobic exercise (SMD:1.215, 95% CrI: 0.113 to 2.306 at 1400 METs-min/week); multicomponent exercise (SMD: 1.202, 95% CrI: 0.193 to 2.231 at 1000 METs-min/week); sensory exercise (SMD: 0.649, 95% CrI: 0.139 to 1.183 at 1000 METs-min/week); resistance training (SMD:0.778, 95% CrI: 0.062 to 1.549 at 750 METs-min/week); mind-body exercise (SMD: 0.580, 95% CrI: 0.218 to 1.137 at 500 METs-min/week); pooled effect size (SMD = 1.21; 95% CrI: 0.88 to 1.54)
Xu 2025 ⁴⁸	This study aimed to examine 6 plausible factors that may influence the therapeutic effects of virtual reality (VR) on improving upper limb function in patients with stroke, with the goal of synthesising an optimal VR intervention protocol. These factors include patients' ages, dosage (hours), delivery schedule (session duration, frequency and trial length), total dosage (hours) and content design.	Stroke	Not reported	Exercise	4–72 consultations / 20–180 mins	Physical: Upper Extremity Fugl-Meyer Assessment (FMA-UE) scores improved (MD 3.80, 95% CI 1.47-6.13, P=.001); Action Research Arm Test (ARAT) scores improved (MD 3.68, 95% CI 1.87-5.48, P<.001); Wolf Motor Function Test (WMFT) scores improved (MD 6.16, 95% CI 4.03-8.29, P<.001); Box and Block Test (BBT) scores showed no significant difference (MD 3.26, 95% CI -1.16 to 7.68, P=.15). Functional: FIM scores improved (MD 4.86, 95% CI 2.92-6.81, P<.001).

Studies including information on dose and reported outcomes for relevant chronic conditions, yet may not have specifically examined the dose-outcome relationship(s)

Ahrens 2023 ⁶¹	The purpose of this meta-analysis was to review the existing efficacy literature on CBT for treatment of anxiety and depression symptoms among stroke patients in the chronic phase, with a sub-analysis of intervention duration and group versus individual intervention.	Stroke	Psychologist; occupational therapist; other	Psychological and motivational support	8–16 consultations / not reported	Psychological/emotional: Anxiety scores reduced (SMD = 1.01 ± 0.32, p < .001); depression scores reduced (SMD = 0.95 ± 0.22, p < .000); anxiety scores maintained at 3 months (SMD = 0.779 ± 0.348, p < .025); depression scores maintained at 3 months (SMD = 0.622 ± 0.285, p < .029).
Alhwoaimel 2024 ⁶²	This systematic review aimed to investigate the effectiveness of virtual reality trunk exercises in reducing trunk impairment post stroke at acute, subacute and chronic stages, compared with conventional exercises.	Stroke	Physiotherapist; occupational therapist	Exercise	12–30 consultations / 20–60 mins	Physical: Virtual reality trunk exercises had a very large, significant effect on reducing trunk impairment compared with conventional exercises (SMD = 1.11; 95% CI = 0.57–1.65; p < 0.0001); subacute stroke: SMD = 1.85 (very large effect); chronic stroke: SMD = 0.87 (large effect).
Álvarez-Bueno 2023 ³¹	The aim of this systematic review and network meta-analysis was to provide evidence regarding the effectiveness and comparative effectiveness of different types of exercise programs on relieving motor symptoms of Parkinson's disease (PD) as measured by the motor part of the Unified Parkinson's Disease Rating Scale (UPDRS).	Parkinson	Physiotherapist; other	Exercise	8–168 consultations / 30–180 mins	Physical: Sensorimotor training including endurance (effect size [ES]–1.09; 95% confidence interval [CI], –1.68 to –0.50), resistance (ES–0.82; 95% CI, –1.23 to –0.41) and dance (ES–0.64; 95% CI, –1.24 to –0.05) were the most effective physical activity interventions for mitigating PD motor symptoms.

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
Auger 2021 ⁶³	To document and describe the best available evidence supporting interventions that target post-stroke rehabilitation of sexuality that can be offered by an allied health professional.	Stroke	Occupational therapist; physiotherapist; psychologist; speech pathologist; Other	Multimodal	1–14 consultations / not reported	Physical: Sexual functioning improved ($p < 0.05$); erectile function improved ($p = .04$). Psychological/emotional: Sexual satisfaction improved ($Z = -2.29$, $p = .02$); perceived intimacy improved. Functional: Quality of life improved (Canadian Occupational Performance Measure +175%); frequency of sexual activity increased ($F = 14.77$, $p < .001$). Other: Proportion of clients addressing sexuality increased from 0 to 80% in 10 months.
Boyne 2024 ⁶⁷	This meta-analysis aimed to quantify mean effects of moderate-to-vigorous intensity locomotor training (LTmv) on walking outcomes in subacute and chronic stroke, assess the risk of harms, determine the magnitude of true variability in LTmv response, and test associations between effect sizes and study characteristics using meta-regression.	Stroke	Not reported	Exercise	12–72 consultations / 30–120 mins	Physical: Moderate-to-vigorous intensity locomotor training (LTmv) yielded significantly greater increases in comfortable gait speed (CGS; chronic, +0.06 m/s [95%CI: 0.01–0.10]; subacute, +0.16 [0.12–0.19]; subacute vs chronic, $p = 0.03$), fast gait speed (FGS; chronic, +0.07 m/s [0.02–0.13]; subacute, +0.21 [0.01, 0.41]; $p = 0.04$) and 6-minute walk test (6MWT (chronic, +33 m [24–42]; subacute, +51 [26–77]; $p = 0.054$), but not steps/day (+260 [-1,159–1,679]). There were no treatment-related serious AEs among 398 LTmv participants in 14 AE-reporting studies. Standard deviation of response estimates indicated substantial response variability: CGS, 0.11 m/s [0.00–0.15]; FGS, 0.14 m/s [-0.00–0.20]; 6MWT, 41 m [27–51].
Chan 2022 ⁶⁵	The aim of this systematic review was to synthesise and evaluate the effectiveness of exergaming on balance, lower limb functional mobility and functional independence in individuals with chronic stroke.	Stroke	Physiotherapist; occupational therapist	Exercise	Not reported / 20–60 mins	Physical: Balance improved (SMD = 0.25, 95% CI [0.08–0.41], $p = .004$); lower limb functional mobility improved (SMD = 0.29, 95% CI [0.08–0.50], $p = .007$). Functional: Functional independence improved (SMD = 0.41, 95% CI [0.09–0.73], $p = .01$).
Clark 2021 ¹⁹	To evaluate the effect of time spent in rehabilitation on measures of activity and impairment after stroke, with specific objectives to assess: 1) if more of the same rehabilitation therapy resulted in greater improvement in activity than less time; 2) the effect of difference in total rehabilitation time on recovery of activity; and 3) the effect of rehabilitation schedule in terms of average minutes per week, frequency per week and total duration of rehabilitation.	Stroke	Physiotherapist; occupational therapist; other	Exercise	10–40 consultations / 12–180 mins	Physical: Motor impairment of upper limb improved (SMD 0.32, 95% CI 0.06 to 0.58, $p = 0.01$); motor impairment of lower limb improved (SMD 0.71, 95% CI 0.15 to 1.28, $p = 0.01$); no significant difference in activity measures of upper limb (SMD 0.09, 95% CI -0.11 to 0.29, $p = 0.36$); no significant difference in activity measures of lower limb (SMD 0.26, 95% CI -0.09 to 0.60, $p = 0.14$). Functional: No significant difference in ADL outcomes (SMD 0.13, 95% CI -0.02 to 0.28, $p = 0.09$). Other: No increased risk of serious adverse events or death (RR 1.20, 95% CI 0.51 to 2.85, $p = 0.68$).
Cooper 2024 ³⁹	To analyse the effects of integrated care (IC) approaches that use behavioural interventions for diabetes and depressive symptoms, examining whether IC significantly reduces HbA1c and depressive symptoms compared with usual treatment, and investigating potential moderating effects of the type of IC approach, type of behavioural intervention, training of interventionists, and clinic setting.	Diabetes	Other	Multimodal	4–24 consultations / 15–90 mins	Physical: HbA1c decreased by 0.36% (95% CI -0.52 to -0.21); within-group HbA1c reduction of 0.61% (95% CI -0.87 to -0.35) for IC intervention group. Psychological/emotional: Depressive symptoms decreased by 0.72 points (95% CI -1.15 to -0.28); PHQ-9 scores reduced by 4.20 points (35% decrease) in 15 studies.
Da Campo 2021 ²⁴	The objective of this systematic review and meta-analysis was to evaluate the effects of aerobic exercise with cycle ergometer	Stroke	Physiotherapist	Exercise	24–60 consultations / 10–45 mins	Physical: Balance (Berg Balance Scale; BBS) no significant improvement (MD=0.03 [95%CI=-0.57 to 0.64]; I2 0%; $p = 0.91$); 6-minute walk test (6MWT) no significant improvement; VO2max no significant improvement.

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
	on balance (assessed by the Berg Balance Scale) and functional capacity (evaluated by maximal oxygen intake and six-minute walk test) in post-stroke patients, compared with non-training controls, active controls or other exercise interventions.					
De Abreu de Lima 2022 ⁶⁶	To verify the effects of resistance training on glycaemic control (HbA1c) in people with Type 1 Diabetes (T1D).	Diabetes	Not reported	Exercise	Not reported / 20–40 mins	Physical: HbA1c reduced (SMD = -0.568 ± 0.165 [95% CI = -0.891 to -0.246]; $p = 0.001$; $I^2 = 82\%$); increased strength; improved lipid profile; reduced BMI and waist circumference; blood glucose levels changed; insulin requirements decreased.
De Almeida 2025 ⁶⁷	The study aimed to compare the effect of power training (PT) versus control or other physical activity interventions on physical functional performance (PFP) in patients with Parkinson's disease (PD), and to address the gap in current literature by synthesising evidence from randomised controlled trials to clarify the overall impact of PT on PFP in PD patients.	Parkinson	Not reported	Exercise	24–36 consultations / 45–90 mins	Physical: Time Up and Go (TUG): Effect size (ES), -0.281 ; 95% CI, -0.693 to 0.130 ; $P = 0.180$; preferred walking speed (PWS): ES, 0.748 ; 95% CI, -0.768 to 2.265 ; $P = 0.333$; fast walking speed (FWS): ES, 0.420 ; 95% CI, -0.950 to 1.791 ; $P = 0.548$.
Ernst 2023 ⁶⁸	To compare the effects of different types of physical exercise in adults with Parkinson's disease (PD) on the severity of motor signs, quality of life (QoL), and the occurrence of adverse events, and to generate a clinically meaningful treatment ranking using network meta-analyses (NMAs).	Parkinson	Physiotherapist; exercise physiologist; other	Multimodal	8–312 consultations / 15–120 mins	Physical: Severity of motor signs improved (SMD -0.77 , 95% CI -1.16 to -0.37 for dance; SMD -0.58 , 95% CI -0.99 to -0.17 for aqua-based training; SMD -0.55 , 95% CI -0.85 to -0.25 for gait/balance/functional training; SMD -0.52 , 95% CI -0.77 to -0.27 for multi-domain training; SMD -0.49 , 95% CI -0.76 to -0.21 for mind-body training); gait parameters improved (specific values not reported); balance improved (specific values not reported); functional mobility improved (specific values not reported); muscle strength increased (specific values not reported). Psychological/emotional: Depression scores may have improved (specific values not reported). Functional: Quality of life improved (SMD -0.85 , 95% CI -1.32 to -0.37 for aqua-based training; SMD -0.52 , 95% CI -0.89 to -0.16 for endurance training; SMD -0.50 , 95% CI -0.83 to -0.17 for mind-body training).
Feng 2025 ⁶⁹	The study aimed to investigate the effect of exercise combined with cognitive dual-task training on improving cognitive function in stroke patients through a systematic review and meta-analysis of current relevant studies, with the purpose of providing a theoretical basis for future studies, developing intervention strategies, and offering an evidence-based foundation for researchers and clinicians.	Stroke	Other	Multimodal	12–40 consultations / 20–180 mins	Psychological/emotional: Cognitive function improved (SMD = 0.41 , 95% CI: $[0.26, 0.57]$, $p = 0.00$); persistent effects on cognitive functioning observed post-intervention (SMD = 0.24 , 95% CI: $[0.05, 0.43]$, $p = 0.01$); working memory improved (SMD = 0.79 , 95% CI: $[0.27, 1.32]$, $p = 0.00$); cognitive flexibility improved (SMD = 0.83 , 95% CI: $[0.52, 1.15]$, $p = 0.00$); total execution function improved (SMD = 0.48 , 95% CI: $[0.15, 0.81]$, $p = 0.00$); total cognitive function improved (SMD = 0.57 , 95% CI: $[0.24, 0.89]$, $p = 0.00$).
Flores 2021 ⁴⁰	The study aimed to systematically review the literature on the effects of physical training on neuromuscular parameters in patients with type 1 diabetes mellitus (T1DM).	Diabetes	Not reported	Exercise	30–40 consultations / 25–70 mins	Physical: Combined training increased the maximum strength levels in individuals with T1DM to a lesser extent than in healthy individuals (ES: 0.363 ; $P = .038$). Strength training increased the maximum strength (ES: 1.067 ; $P < .001$), as well as combined training (ES: 0.943 ; $P < .001$); both compared with aerobic training in patients with T1DM. Strength training increased the maximum strength in a similar magnitude to combined training in patients with T1DM (ES: -0.114 ; $P = .624$).
Gamborg 2022 ⁷⁰	The purpose of the review was to evaluate and compare the effects of different	Parkinson	Physiotherapist	Exercise	8–208 consultations / not reported	Physical: Muscle strength improved (SMD = 0.83 [95% CI: $0.54, 1.12$]); Cardiorespiratory fitness improved (SMD = 0.27 [0.07, 0.47]); Unified

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	intensive exercise therapy modalities-RT, ET, and other intensive training modalities (OITM)-to update a previous literature review on exercise effects in PD. The study aimed to assess how these modalities affect physiological performance markers, functional capacity, symptoms and progression of PD compared with usual care or active control.					Parkinson's Disease Rating Scale (UPDRS-III) scores potentially improved ('on-medication' state: SMD = -0.15 [-0.38, 0.09] for ET, 'off-medication' state: small effects). Functional: Functional capacity improved (Timed Up and Go Test: SMD = -0.62 [-1.01, -0.24] for RT, SMD = -0.21 [-0.46, 0.04] for ET; 6-Min Walk Test: SMD = 0.89 [0.17, 1.62] for ET); quality of life improved (SMD = -0.41 [-0.72, -0.09]).
Gattoni 2025 ⁷¹	The systematic review aimed to investigate randomised controlled trials or randomised clinical trials of cognitive training interventions for enhancing cognitive functions in people with Parkinson's disease (PwPD), including studies targeting other motor and non-motor symptoms, and encompassing various cognitive training approaches such as traditional or technological tools, transcranial direct current stimulation (tDCS), multi-domain training programs, action observation training (AOT) and motor imagery (MI) components.	Parkinson	Psychologist	Multimodal	8–64 consultations / not reported	Physical: Walking speed increased; Freezing of Gait severity decreased; motor impairment decreased (after short-term follow-up in AOT group); balance improved (after short-term follow-up in AOT group). Functional: Quality of life improved; mobility improved during Timed-Up and Go tests (cognitive and manual; maintained 2 months after training). Other: Global cognition improved; attention improved; processing speed improved; executive functions improved; visuospatial abilities improved; memory improved; short-term memory improved; working memory improved; active periods increased and active mean bout lengths decreased (related to improved executive functions).
Ghayour Najafabadi 2022 ⁷²	To examine the effectiveness of different protocols of aquatic therapy on lower limb function compared with land-based exercises in patients following stroke through a systematic review and meta-analysis.	Stroke	Physiotherapist; other	Exercise	10–48 consultations / 30–60 mins	Physical: Balance improved (Berg Balance Scale SMD 0.72, 95% CI 0.50-0.94, I ² =67%, z=6.40, P=0.00001); walking speed improved (SMD -0.45, 95% CI -0.71 to -0.19, I ² =57%, z=6.40, P=0.0001); mobility improved (Timed Up and Go SMD -0.43, 95% CI -0.7 to -0.17, I ² =71%, z=3.24, P=0.001).
Gibson 2022 ²⁸	To assess the impact of occupational therapy on activities of daily living (ADL), both basic and instrumental, global cognitive function, and specific cognitive abilities in people who have cognitive impairment following a stroke.	Stroke	Occupational therapist; physiotherapist; psychologist; speech pathologist; other	Multimodal	8–60 consultations / 30–60 mins	Physical: Basic Activities of Daily Living (BADL) improved by 2.26 points on Functional Independence Measure (FIM) scale (95% CI 0.17 to 4.22; P = 0.03) postintervention; BADL improved by 11.38 points on FIM at 6-month follow-up. Functional: Instrumental activities of daily living (IADL) effect uncertain (SMD 0.94, 95% CI 0.41 to 1.47; P = 0.0005); community integration showed insufficient evidence of effect (SMD 0.09, 95% CI -0.35 to 0.54; P = 0.68). Other: Global cognitive function improved by 1.63 points on Montreal Cognitive Assessment (MoCA) postintervention; working memory improved (SMD 0.45, 95% CI 0.26 to 0.65); immediate verbal memory span improved by recall of 1 digit on Digit Span Forwards test; sustained visual attention improved by 16 seconds postintervention.
Giuriati 2021 ⁷³	The aim of this study was to conduct a systematic literature review of randomised controlled trials to evaluate the results of aquatic physical therapy on patients affected by strokes.	Stroke	Physiotherapist	Exercise	10–30 consultations / 30–60 mins	Physical: Improvements were observed in balance (Berg Balance Scale: mean difference [MD] = 3.56 at 2–4 weeks, p = .03; MD = 7.01 at 4–6 weeks, p = .0002). Functional: Mobility (Timed Up and Go: MD = -3.79, p = .004), and functional reach (MD = 4.19, p = .0007). Muscle strength gains were significant for knee flexion (MD = 4.03, p = .007) but not for extension (p = .82). Activities of daily living also improved (Modified Barthel Index: MD = 9.49, p = .03).
Gollan 2022 ³⁴	The aim of this systematic review and meta-analysis was to evaluate the effects	Parkinson	Not reported	Exercise	6–120 consultations / 45–60 mins	Physical: Muscle strength improved (SMD = -0.84, 95% CI -1.29--0.39, p = 0.0003); motor impairment improved (SMD = -0.81, 95% CI -1.34--0.27, p =

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	of resistance training on motor (muscle strength, motor impairments, freezing of gait, mobility and balance) and non-motor outcomes (quality of life, depression and cognition) in Parkinson's disease patients compared with both passive and physically active control groups.					0.003); mobility and balance improved (MD = -1.81, 95% CI -3.13--0.49, p = 0.007); freezing of gait improved in 1 out of 4 studies. Psychological/emotional: Depression showed no superior effects compared with other physically active interventions. Functional: Quality of life improved (small significant effects, specific values not reported).
Huang 2025 ⁷⁴	This systematic review aimed to synthesise existing evidence to evaluate the impact of home-based VR interventions on upper extremity function recovery in patients with stroke, analyse key factors influencing rehabilitation outcomes, and provide a clearer understanding of how home-based VR training can be optimised for stroke rehabilitation.	Stroke	Not reported	Multimodal	8–60 consultations / 20–60 mins	Physical: Upper extremity function improved (Fugl-Meyer Assessment upper extremity (FMUE) +10.1 points, p<0.001); arm displacement increased (414.6 m vs 327 m, p=0.02); Box and Block Test improved (+11.2 blocks, p=0.04); Action Research Arm Test (ARAT) showed no significant difference between Wii system and control group (p>0.05).
Huber 2022 ⁷⁵	The aim of this systematic review was to identify, summarise and compare the effects of different motor-cognitive intervention concepts on gait and cognitive functions in chronic stroke patients, as evaluated by randomised controlled trials (RCTs), compared with single training interventions.	Stroke	Not reported	Multimodal	4–84 consultations / 20–90 mins	Physical: Gait speed improved (g = 0.43, 95% CI [0.22, 0.64], p < 0.0001); walking endurance improved (g = 0.43, 95% CI [0.18, 0.69], p = 0.0008); cadence improved (g = 0.85, 95% CI [0.48, 1.23], p < 0.00001). Other: Cognitive flexibility improved (g = 0.27, 95% CI [0.04, 1.4], p = 0.04); inhibition not significantly affected (g = 0.76, 95% CI [-1.10, 2.62], p = 0.42).
Huissoud 2024 ⁷⁶	To investigate the effectiveness and safety of non-pharmacological interventions (NPIs) for pain management in Parkinson's disease (PD) through a systematic review.	Parkinson	Physiotherapist; other	Multimodal	3–72 consultations / 20–150 mins	Physical: Pain reduction observed in body weight support treadmill training (BWSTT; significant decrease); Nordic walking (improvement in back, hands and legs); Thai massage (significant beneficial effect); High-Frequency repetitive Transcranial Magnetic Stimulation (HF rTMS; significant improvement); muscle pain following exercise or abdominal pain, hypotension, transient headaches or dizziness, transient light-headedness and falls (minor adverse events). Other: Safety confirmed with few minor transient adverse events.
Kanika 2023 ⁷⁷	The study aimed to systematically review the available literature on the effects of physiotherapy treatment for Complex Regional Pain Syndrome (CRPS) following a stroke, perform a meta-analysis of this literature, determine the impact of physiotherapy interventions on CRPS symptoms in stroke patients, and gather all available physiotherapy treatment options to identify the interim in the effectiveness or efficacy of the available options.	Stroke	Physiotherapist; occupational therapist; speech pathologist; other	Multimodal	15–23 consultations / 20–30 mins	Physical: Pain intensity decreased (SMD 4.13, 95% CI 3.51 to 4.74, I2 = 99%). Functional: Functional independence improved (SMD 2.07, 95% CI 1.45 to 2.70, I2 = 100%).
Kashif 2022 ⁷⁸	The systematic review aimed to determine the effect of virtual reality on balance, gait and motor function in Parkinson's disease patients, with or without routine physical therapy, and to critically assess and evaluate the quality of included studies.	Parkinson	Physiotherapist; occupational therapist	Multimodal	12–40 consultations / 30–60 mins	Physical: Balance improved (reported in 14 studies); motor function improved equally compared with other groups (6 out of 9 studies); muscle strength increased; physical function and symptoms in upper limb improved; health status improved. Functional: Quality of life improved; fall risk reduced; cognitive function improved.

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						Psychological/emotional: Emotional state improved. Other: Level of activity/participation increased; level of satisfaction increased.
Khan 2024 ¹⁸	To investigate the effects of cycling on walking outcomes in adults with stroke.	Stroke	Physiotherapist; other	Exercise	12–365 consultations / 10–60 mins	Physical: Six-minute walk test distance improved by 6.1 to 63.0 m; gait velocity improved by 0.01 to 0.21 m/sec; functional: Get Up and Go Test time decreased from 17.42 (±17.57) sec to 15.26 (±14.82) sec (P = .038).
Khattab 2021 ⁷⁹	The purpose of this systematic review was to examine sex-specific effects of exercise interventions on cognitive functioning in adults with stroke by comparing studies that included higher vs lower proportion of females. The authors hypothesised that studies with a higher proportion of females would display greater improvements in cognition following exercise compared with studies with a lower proportion of females.	Stroke	Physiotherapist; occupational therapist	Multimodal	8–72 consultations / 30–90 mins	Psychological/emotional: Memory—no significant difference between higher and lower female proportion studies ($\chi^2 = 1.52$, p = 0.22); executive function—no significant difference ($\chi^2 = 0.56$, p = 0.45; Chi2 = 0.00, p = 0.98); language—no significant difference (Chi2 = 3.17, p = 0.08); global cognition—no significant difference ($\chi^2 = 0.88$, p = 0.35).
Kountoura 2025 ⁸⁰	This review aimed to evaluate the effects of online occupational therapy interventions on functional outcomes and quality of life of patients with Parkinson’s disease, identify and synthesise available research on the effectiveness of telerehabilitation programs for individuals with Parkinson’s disease, explore the technological tools and intervention methods used in telerehabilitation for Parkinson’s disease, and examine the benefits of telerehabilitation on the quality of life for individuals with Parkinson’s disease.	Parkinson	Occupational therapist; other	Multimodal	16–60 consultations / not reported	Physical: Gait speed improved; stride length increased; gait variability reduced; mobility improved; balance enhanced; upper limb function advanced. Psychological/emotional: Psychological wellbeing improved. Functional: Quality of life improved (measured by PDQ-39 and other disease-specific instruments); activities of daily living enhanced. Other: Motor skills improved; cognitive function improved.
Krohn 2024 ⁸¹	The aim of this systematic review, meta-analysis and meta regression of randomised controlled trials (RCTs) was to study the effectiveness of therapeutic exercise interventions with virtual reality (VR) training on balance and walking at the level of activity and participation among persons with chronic stroke compared with the following control groups: no treatment, conventional physical therapy, specific training, similar treatment, or identical treatment without the use of VR.	Stroke	Physiotherapist; other	Multimodal	9–36 consultations / 30–90 mins	Physical: Balance improved (effect size = 0.51; 95% CI: 0.29 to 0.72, p < 0.001); walking improved (effect size = 0.31; 95% CI: 0.09 to 0.53, p = 0.006). Functional: Balance and walking improvements were related to ICF domains of activity and participation.
Lahude 2023 ⁸²	To analyse and quantify the effects of virtual reality (VR)-based therapy protocols on the manual dexterity of individuals with Parkinson’s disease (PD) through a systematic review of published scientific literature.	Parkinson	Not reported	Multimodal	8–60 consultations / 30–60 mins	Physical: Manual dexterity improved (Box and Blocks Test and 9-Hole Peg Test results improved post-treatment); motor function measured by Unified Parkinson Disease Rating Scale (UPDRS-III) showed conflicting results. Functional: Quality of life measured by PDQ-39 showed conflicting results. Other: Patient satisfaction high (CSQ-8 scores averaged 29.3 and 29.6 in two studies).
Landim 2024 ⁸³	The objective of this systematic study is to synthesise and evaluate the present peer-reviewed literature to assess the	Stroke	Occupational therapist	Multimodal	10–30 consultations / 30–150 mins	Physical: Upper extremity function and fine motor skills improved; range of motion, grasping, pinching, selective finger movements and strength improved (no specific statistics provided).

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	effectiveness of VR in occupational therapy approaches for CVA rehabilitation, specifically aiming to (i) describe the methods and outcomes of VR studies; (ii) investigate how VR rehabilitation can help people return to work after a CVA; and (iii) determine the effectiveness of VR rehabilitation for improving daily living skills after a CVA.					Psychological/emotional: Depression measured using Hamilton Depression Scale (no specific results provided). Functional: Quality of life improved (no specific statistics provided); functional outcomes assessed using Functional Independence Measure (FIM) and cerebrovascular accident (CVA) Impact Scale 3.0 (no specific results provided).
Lee, J 2020 ²⁰	The primary purpose of this study was to systematically review and quantify the effects of combined aerobic training (AT) and resistance training (RT) on cardiorespiratory fitness (CFR), muscle strength and walking capacity in ambulatory persons with stroke, while also examining specific exercise training variables (intensity, duration, frequency and volume) and different stroke populations (age, gender, BMI, stroke type and post-stroke period) to provide evidence for optimal exercise guidelines. The study also aimed to report adverse events.	Stroke	Other	Exercise	8–120 consultations / 20–60 mins	Physical: Cardiorespiratory fitness (CRF) increased by 12% (mean ES = .41, 95% CI = .25 to .56, P < .0001); muscle strength increased by 33% (mean ES = .59, 95% CI = .32 to .86, P < .0001); walking capacity increased by 14% (mean ES = .45, 95% CI = .25 to 0.65, P < .0001).
Lee, KE 2022 ²¹	The aim of the study was to examine research investigating the effects of rehabilitation exercise programs in recovery of physical function in patients with stroke, based on aspects of their physical function, physical strength and daily activities, and to systematically examine their effects.	Stroke	Not reported	Multimodal	2–30 consultations / 20–90 mins	Physical: Gait and walking capacity improved significantly (p-value not specified); shoulder subluxation decreased (statistical details not provided); upper extremity function improved (statistical details not provided); motor function of upper limbs improved (statistical details not provided); gait speed improved (statistical details not provided); weight-bearing asymmetry minimised (statistical details not provided); proprioception improved (statistical details not provided).
Li, G 2024 ²⁷	We aimed to estimate the effect of exercise on cognitive function in stroke patients.	Stroke	Physiotherapist	Exercise	18–72 consultations / 30–120 mins	Psychological/emotional: Overall cognitive function improved (Cohen's d = 0.37, 95% CI 0.16 to 0.58, p < 0.01); memory improved (Cohen's d = 0.63, 95% CI 0.29 to 0.97, p < 0.01); cognitive speed not significantly improved (Cohen's d = 0.16, 95% CI -0.14 to 0.46, p = 0.28); aerobic exercise improved cognitive function (Cohen's d = 0.56, 95% CI 0.23 to 0.90, p < 0.01); resistance exercise did not significantly improve cognitive function (Cohen's d = 0.19, 95% CI -0.51 to 0.88, p = 0.60); exercise interventions <60 minutes improved cognitive function (Cohen's d = 0.48, 95% CI 0.15 to 0.82, p < 0.01); exercise interventions ≥60 minutes had no significant effect on cognitive function.
Li, W 2023 ⁸⁴	To explore the effects of exercise intervention programs on cognitive and motor function in patients with cognitive impairment after stroke.	Stroke	Not reported	Multimodal	8–120 consultations / 30–120 mins	Physical: Fugl-Meyer Assessment (FMA) score higher in exercise group (P < 0.05), improving motor function; Berg Balance Scale (BBS) score higher in exercise group (P < 0.05), improving balance ability. Psychological/emotional: Addenbrooke's Cognitive Examination (ACE) scores significantly higher in exercise group (P < 0.05); Montreal Cognitive Assessment (MoCA) scores mixed results; Trial Making Test (TMT) scores reported but results not specified. Functional: Barthel Index (BI) score higher in exercise group (P < 0.05), improving ability to conduct activities of daily living (ADL).

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Li, X 2022 ⁸⁵	To study the effect of aerobic exercise on cognitive function of post-stroke patients, especially to identify specific interventions that are the most likely to maximise cognitive benefits of stroke patients.	Stroke	Not reported	Exercise	20–216 consultations / 40–60 mins	Psychological/emotional: Global cognition ability improved (0.51; 95% CI 0.16-0.86; P = .004); moderate-intensity aerobic exercise had largest effect on global cognition (0.98; 95% CI 0.48-1.47; P = .0001); low-intensity aerobic exercise improved global cognition (0.49; 95% CI 0.10-0.87; P = .01). Other: Cognitive flexibility no significant difference (-0.13; 95% CI -0.32 to 0.06; P = .17); working memory no significant difference (0.49; 95% CI -0.10 to 1.09; P = .10); selective attention and conflict resolution no significant differences.
Li, X 2025 ²⁶	To investigate the effects of home-based exercise on the balance ability in post-stroke patients.	Stroke	Not reported	Exercise	20–216 consultations / 30–120 mins	Physical: Static balance ability improved (Berg Balance Scale: MD = 3.45, 95% CI [1.43, 5.47], p = 0.0008); walking function improved after sensitivity analysis (MD = -1.14, 95% CI [-2.12, -0.16], p = 0.02, I ² = 0%, fixed effect model). Functional: Time Up and Go Test showed no significant improvement (MD = -0.34, 95% CI [-4.30, 3.61], p = 0.86, I ² = 96%, random effects model).
Li, Y 2021 ⁸⁶	The purpose of this systematic review was to evaluate the efficacy and safety of moderate aerobic exercise for patients with PD.	Parkinson	Not reported	Multimodal	20–112 consultations / 20–90 mins	Physical: Balance improved (WMD = -0.42, 95% CI: -0.59 to -0.25, P<0.001); gait improved (WMD = 49.97, 95% CI: 17.84-82.10, P<0.001); motor symptoms not significantly improved (no statistics provided). Functional: Quality of life improved with treadmill exercise (WMD = -3.90, 95% CI: -5.02 to -2.78, P<0.001); overall quality of Life not significantly improved (MD = -2.60, 95% CI: -5.83-0.64, P=0.12). Other: Adverse events reported (mild: pain, palpitation, sprain/strain; serious: falls, fractures, tachycardia).
Li, Y 2022 ⁸⁷	To investigate the efficacy and acceptability of virtual reality (VR) with time-dose-matched conventional therapy (CT) in patients post-stroke with upper limb dysfunction.	Stroke	Physiotherapist; occupational therapist	Exercise	6–42 consultations / 30–60 mins	Physical: Structure/function scores improved (SMD = 0.35); upper extremity Fugl-Meyer (FMU), Stroke Impact Scale Strength (SIS Strength), grip strength (GS) and Motricity Index (MI) were used. Functional: Activity and participation scores showed no significant difference between virtual reality and conventional therapy.
Li, Z 2024 ⁸⁸	The study examined whether rehabilitation using aerobic exercise is more appropriate for patients less than 3 months post-stroke or more appropriate for patients more than 3 months post-stroke.	Stroke	Not reported	Exercise	12–60 consultations / 45–60 mins	Physical: VO2 peak improved (SMD = 0.97, 95%CI 0.66-1.28); walking capacity improved (SMD = 1.19, 95%CI 0.75-1.62). Functional: Global Cognitive Function improved (SMD = 0.81 95%CI 0.49-1.12); Mini-Mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA) scores improved (specific values not provided). Other: Brain-derived neurotrophic factor increased (SMD = 2.73, 95%CI 2.03-3.43); patients with stroke time less than 3 months showed greater improvement in cognitive ability (SMD = 0.87, 95%CI 0.62-1.12) compared with patients with stroke time more than 3 months (SMD = 0.68, 95%CI -0.08-1.43); patients with stroke time less than 3 months showed superior rehabilitation outcomes in walking tests and cardiopulmonary function (specific values not provided).
Lin 2024 ⁸⁹	This systematic review aimed to examine whether dual-task (DT) training was superior to single-task (ST) training in improving DT and ST walking, balance and cognitive functions for individuals with Parkinson's disease (PD).	Parkinson	Not reported	Multimodal	128–30 consultations / 30–70 mins	Physical: Double support time improved (Hedges' g = 0.34); stride time variability improved (Hedges' g = 0.18); laboratory balance measurement improved (Hedges' g = 0.18, 1.25). Functional: Walking ability improved (significant between-group difference in double support time and stride time variability). Other: Clinical balance measurement showed no significant improvement.
Lin 2025 ⁹⁰	To compare the effects of behavioural rehabilitation therapy and Chinese traditional rehabilitation therapy (CTRT) combined with rTMS on upper limb function and activities of daily living in	Stroke	Occupational therapist; physiotherapist	Multimodal	Not reported / not reported	Physical: Upper limb Fugl-Meyer assessment (UL-FMA) improved (Chinese traditional rehabilitation therapy (CTRT): SMD 1.23 [95% CI, 0.95-1.52], P <0.0001; clinical routine rehabilitation therapy (CRRT): SMD 1.23 [95% CI, 0.98-1.48], P <0.0001; behavioural rehabilitation therapy (BRT): SMD 0.81 [95% CI, 0.30-1.31], P <0.01; SRT: SMD 0.77 [95% CI, 0.26-1.28], P <0.01).

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	stroke patients through a reticulated meta-analysis, in order to provide a basis for clinical optimisation of rehabilitation strategies.					Functional: Activities of daily living (ADL) improved (SRT: SMD 1.74 [95% CI, 1.31-2.18], $P < 0.0001$; CTRT: SMD 1.03 [95% CI, 0.69-1.37], $P < 0.0001$; CRRT: SMD 0.93 [95% CI, 0.60-1.26], $P < 0.0001$; BRT: SMD 0.73 [95% CI, 0.31-1.15], $P < 0.01$).
Liu, J 2025 ²⁹	To systematically evaluate the intervention effect of modified constraint-induced movement therapy (m-CIMT) on upper limb function in patients who had a stroke.	Stroke	Not reported	Multimodal	9–30 consultations / 30–180 mins	Physical: Fugl-Meyer Assessment (FMA) scores improved (Hedges' $g = 1.25$, 95% CI 0.53 to 1.96, $p=0.00$); Motor Activity Log Quality of Movement (MAL-QOM) scores improved (Hedges' $g = 0.63$, 95% CI 0.41 to 0.85, $p=0.00$); Action Research Arm Test (ARAT) scores improved (Hedges' $g = 0.92$, 95% CI 0.45 to 1.40, $p=0.00$); Wolf Motor Function Test (WMFT) scores improved (Hedges' $g = 0.38$, 95% CI 0.11 to 0.66, $p=0.01$).
Liu, Y 2025 ⁹¹	The aim of this research was to evaluate the effects of exercise training on mobility, balance and gait parameters, with a particular emphasis on the Timed Up and Go test (TUG), the Berg Balance Scale (BBS), the 6-minute walk test (6MWT) and the 10-metre walk test (10MWT).	Stroke	Not reported	Exercise	9–40 consultations / Not reported	Physical: Mobility (TUG test) improved (MD = -4.81 seconds, $p < 0.01$, 95% CI [-8.23 to -1.38]); balance (BBS) improved (MD = 3.81 points, $p < 0.01$, 95% CI [1.98-5.64]); 6-minute walk test (6MWT) no significant change (SMD = 0.00, $p > 0.05$, 95% CI [-0.24 to 0.25]); 10-metre walk test (10MWT) no significant change (SMD = 0.03, $p > 0.05$, 95% CI [-0.07 to 0.12]).
López-Liria 2023 ⁹²	The aim of this work was to determine the efficacy of specific balance and trunk mobility exercises, as well as their benefits for and effects on patients with idiopathic PD.	Parkinson	Physiotherapist; other	Exercise	9–24 consultations / 45–90 mins	Physical: Static balance not significantly improved (SMD = -0.10, 95% CI = -0.29, 0.08; $p = 0.28$); dynamic balance not significantly improved (SMD = 0.64, 95% CI = -0.24, 1.52; $p = 0.15$); static balance measured by Berg Balance Scale significantly improved (SMD = -0.52, 95% CI = -1.01, -0.02; $p = 0.04$).
Lorenzo-García 2024 ⁹³	To assess which type of physical exercise intervention has the most beneficial effects on balance, postural stability and general mobility in patients with Parkinson's disease, using the Activities-specific Balance Confidence (ABC) scale, Berg Balance Scale (BBS), Mini-Balance Evaluation Systems Test (Mini-BESTest), and Timed Up and Go Test (TUG).	Parkinson	Physiotherapist	Exercise	6–120 consultations / 20–120 mins	Physical: Balance improved (ES 0.85; 95% CI 0.32, 1.38); resistance improved (ES 0.58; 95% CI 0.10, 1.07). Functional: Activities-specific Balance Confidence (ABC) scale improved with balance exercises compared with sensorimotor training including endurance interventions. Other: Alternative exercises improved (ES 1.21; 95% CI 0.62, 1.81); bodyweight support (BWS) interventions improved (ES 1.31; 95% CI 0.57, 2.05); dance improved (ES 1.18; 95% CI 0.33, 2.03); sensorimotor training including endurance interventions improved (ES 1.10; 95% CI 0.46, 1.75).
Mah 2022 ⁹⁴	To shed light on the role of high-intensity early neurorehabilitation in stroke, this systematic review aimed to answer the following research questions: (1) Is HIE effective for improving LL functional outcomes in the acute and subacute stroke population (0–6 months post-stroke)? (2) Is the implementation of HIE safe in acute and subacute stroke settings?	Stroke	Physiotherapist	Multimodal	8–60 consultations / 11–60 mins	Physical: 6-min walk test (6MWT) improved in 3/4 studies for High-Intensity Exercise (HIE) group vs control; gait speed improved significantly in all RCTs for HIE group vs control; steps per day showed no significant difference between intervention and control groups. Functional: Berg Balance Scale (BBS) improved significantly in 1/3 studies for HIE vs active control; Barthel Index (BI) improved in HIE group vs active control post-intervention in one study, and vs passive control at 6-month follow-up in another study.
Malwanage 2024 ⁹⁵	This systematic review and meta-analysis aimed to determine the efficacy of proprioceptive training on hand dexterity, upper limb function and quality of life in people with Parkinson's disease compared with no or other active interventions. The primary aim was to determine the effect on hand dexterity or hand/upper limb proprioception, while secondary aims	Parkinson	Occupational therapist; physiotherapist	Multimodal	4–40 consultations / 30–180 mins	Physical: Fine motor dexterity improved for dominant hand (SMD 0.34, 95% CI 0.08-0.60, $P=.01$) and non-dominant hand (SMD 0.36, 95% CI 0.10-0.63, $P<.01$); gross manual dexterity improved for dominant hand (SMD 1.73, 95% CI 0.30-3.16, $P=.02$); no evidence of effects on non-dominant hand gross manual dexterity. Functional: No evidence of effects on upper limb function; quality of life not improved ($P=.08$ and $P=.71$ in two studies). Other: Short-term effects on hand dexterity inconclusive.

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
	focused on upper limb task performance and quality of life.					
McGlinchey 2020 ⁹⁶	To evaluate the effectiveness of rehabilitation interventions on physical function and immobility-related complications in severe stroke survivors, and to identify areas for future rehabilitation research for these patients.	Stroke	Physiotherapist; occupational therapist	Multimodal	Not reported / not reported	Physical: Active wrist movement showed no improvement with 6-week neuromuscular electrical stimulation (NMES) + usual therapy vs usual therapy alone (moderate quality evidence); lower limb function improved Activities of Daily Living (ADL) independence with additional therapy in first 20 weeks post-stroke (moderate quality evidence). Functional: ADL independence improved with additional lower limb therapy in first 20 weeks post-stroke (moderate quality evidence); no difference in ADL independence for 3-month OT intervention vs usual care in care home residents with severe or very severe disability (high quality evidence).
Menahemi-Falkov 2022 ⁵⁸	This systematic review aimed to examine the evidence concerning the immediate response and maintenance of treatment outcomes following intensive therapy programs for individuals with chronic aphasia, addressing three questions: 1) What impairment outcomes are maintained? 2) What activity/participation outcomes are maintained? 3) What quality of life outcomes are maintained?	Stroke	Not reported	Multimodal	Not reported / not reported	Functional: Western Aphasia Battery-Aphasia Quotient (WAB-AQ), Boston Naming Test (BNT), Aachen Aphasia Test (AAT) profile score improved (43.64% response rate at post-therapy); Amsterdam–Nijmegen Everyday Language Test (ANELT) A-scale, Communicative Effectiveness Index (CETI) improved (31.46% response rate at post-therapy); Quality of life: SAQOL-39g improved (31.17% response rate at post-therapy). Other: 70.42% of immediate responders maintained impairment-based outcome gains at follow-up (M = 8.34 weeks); 42.41% of all participants in group studies had pre- to post-intervention change score below the Standard Error of Measurement cut-off.
Menezes 2025 ⁹⁷	The study aims to investigate: 1) whether the effects of backward walking are comparable to forward walking in improving walking parameters (speed, cadence and stride length) in stroke patients; 2) if adding backward walking to forward walking enhances the benefits of forward walking alone; and 3) whether any benefits are maintained after the intervention period.	Stroke	Not reported	Multimodal	9–48 consultations / 20–70 mins	Physical: Walking speed improved by 0.16 m/s compared with forward walking (95% CI: 0.06 to 0.27, p = 0.002); cadence increased by 3 steps/min compared with forward walking (95% CI: 2 to 6, p = 0.22); stride length increased by 0.03 m compared with forward walking (95% CI: 0.02 to 0.09, p = 0.26); addition of backward walking increased walking speed by 0.03 m/s (95% CI: 0.01 to 0.04, p = 0.002), cadence by 5 steps/min (95% CI: 1 to 10, p = 0.03), and stride length by 0.04 meters (95% CI: 0.01 to 0.09, p = 0.09).
Moreno-Ligero 2023 ⁹⁸	The main aim of this study was to analyse the impact of the use of mHealth systems on gait and dynamic balance outcomes in subjects with neurological disorders, through a systematic review and meta-analysis.	Stroke	Physiotherapist; occupational therapist	Multimodal	Not reported / 20–60 mins	Physical: Gait speed improved by 0.10 s/m (95% CI=0.07,0.13; p<0.001); cadence increased by 8.01 steps/min (95% CI=3.30,12.72; p<0.001); affected step length increased by 8.89 cm (95% CI=4.88,12.90; p<0.001); non-affected step length increased by 8.08 cm (95% CI=2.64,13.51; p=0.004); stride length showed no significant change (MD=0.08; 95% CI=-0.00,0.16; p=0.06). Functional: Timed Up and Go (TUG) test improved (MD=-7.15; 95% CI=-9.30,-4.99; p<0.001); Postural Assessment Scale for Stroke patients (PASS) mobility improved (MD=1.71; 95% CI=1.38,2.04; p<0.001); Four Square Step Test (FSST) showed no significant change (MD=-1.90; 95% CI=-3.82,0.03; p>0.05); 6-Minute Walk Test (6MWT) showed no significant change (MD=11.74; 95% CI=-16.40,39.89; p=0.41).
Moreno-Segura 2022 ⁹⁹	The aim of this systematic review and meta-analysis of randomised controlled trials (RCTs) was to determine the effects of core training alone or combined with conventional therapy on trunk function, balance and gait in stroke patients; analyse these effects considering the stroke stage and the core training type;	Stroke	Not reported	Multimodal	Not reported / 90–300 mins	Physical: Trunk function improved (P ≤ 0.008); balance improved (P < 0.00001); gait performance not improved (P = 0.11 in chronic and P = 0.06 in pooled cases).

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
	establish the methodological quality of the studies published to date; and determine the best dosage and type of exercise for these aspects.					
Muñoz-Gomez 2023 ¹⁰⁰	To review and synthesise existing evidence on the effectiveness of mirror therapy (MT) compared with active exercise-based interventions (i.e. cross-training and conventional exercise) for reducing spasticity and sensory impairment in stroke survivors.	Stroke	Not reported	Multimodal	12–30 consultations / 30–90 mins	Physical: Spasticity measured by Modified Ashworth Scale (MAS) and Tardieu scale, no significant improvements in some studies; sensory impairment measured by Rivermead Assessment of Somatosensory Performance, Ayres Sensory Integration Test, Nottingham Sensory Assessment, and Semmes-Weinstein monofilaments, no restoration of sensory impairment in either MT plus exercise or exercise alone groups. Other: Beneficial effect on motor-related regions activation (premotor cortex and inferior parietal lobe) due to action observation in addition to action itself.
Muñoz-Pardeza 2024 ⁴⁴	The aim of this study was to identify optimal nonpharmacological interventions on glycaemic control, measured by glycated haemoglobin (HbA1c), in children and adolescents with type 1 diabetes, with daily insulin requirements as a secondary outcome, compared with usual care conditions. Additionally, the study aimed to provide a comprehensive synthesis of nonpharmacological interventions for youth with type 1 diabetes through network meta-analysis (NMA).	Diabetes	Not reported	Multimodal	1–728 / 20–90 mins	Physical: Multicomponent exercise, which includes aerobic and strength training (n=214, standardised mean difference [SMD]=– 0.63, 95% credible interval [95% CrI] – 1.09 to – 0.16) and nutritional supplements (n=146, SMD=– 0.49, – 0.92 to – 0.07) demonstrated the greatest HbA1c reductions. These interventions also led to the larger decreases in daily insulin needs (n=119, SMD=– 0.79, 95% CrI – 1.19 to – 0.34) and (n=57, SMD=– 0.62, 95% CrI – 1.18 to – 0.12, respectively).
Muñoz-Vigueras 2021 ⁵⁹	To assess the effect of speech and language therapy (SLT) on Hypokinetic dysarthria (HD) in Parkinson's disease, systematically review the results of specific SLT programs for HD, and perform a meta-analysis to analyse the results found among different programs.	Parkinson	Not reported	Other	8–16 consultations / 45–240 mins	Physical: Sound pressure level in sustained phonation tasks improved (standard mean difference = 1.79; 95% CI = 0.86, 2.72; p < 0.0001); sound pressure level and semitone standard deviation in reading tasks improved (specific values not reported); sound pressure level in reading tasks improved (MD = 0.99; 95% CI = 0.42, 1.56; p < 0.0001); sound pressure level in monologue tasks improved (MD = 1.07; 95% CI = 0.22, 1.93; p < 0.0001 compared with no intervention; MD = 0.90; 95% CI = -0.56, 0.76; p = 0.0008 compared with respiratory treatment) Functional: Intelligibility (%) improved (MD = 0.22; 95% CI = -0.29, 0.74; p = 0.1454).
Nascimento 2021 ²²	The study aimed to determine whether mechanically assisted walking improves walking speed, distance and participation compared with no/non-walking intervention or overground walking after stroke, and if any benefits are maintained beyond the intervention period.	Stroke	Not reported	Multimodal	4–130 consultations / 20–60 mins	Physical: Walking speed increased by 0.13 m/s (95% CI 0.08 to 0.19); walking distance increased by 46 m (95% CI 24 to 68). Functional: Social participation may have improved (SMD 0.16, 95% CI - 0.15 to 0.48).
Nascimento 2022 ¹⁰¹	This systematic review aimed to examine the effects of home-based exercises in comparison with centre-based exercises for improving the paretic upper limb after stroke.	Stroke	Physiotherapist; occupational therapist; other	Multimodal	12–120 consultations / 40–120 mins	Physical: Motor recovery (MD 1.4 points; 95% CI -0.9 to 3.8); dexterity (MD - 0.01 pegs/s; 95% CI -0.04 to 0.05); strength (MD 0.30 kg; 95% CI -2.4 to 3.0). Functional: Upper limb activity performance (SMD -0.04; 95% CI -0.25 to 0.18); quality of movement (MD 0.1 points; 95% CI -0.2 to 0.4).
Nascimento 2022 (2) ¹⁰²	Research questions for this systematic review were: 1. In people who have had a stroke, how comparable are the effects of home-based exercises to those of equivalent centre-	Stroke	Physiotherapist; occupational therapist; other	Multimodal	10–36 consultations / 3–120 mins	Physical: Walking speed similar between home-based and centre-based exercises (MD -0.03 m/s, 95% CI -0.07 to 0.02); balance similar between home-based and centre-based exercises (MD 0 points on Berg Balance Scale, 95% CI -1 to 2). Functional: Mobility possibly favours centre-based exercises but imprecise

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	based exercises for improving walking speed, balance, mobility and participation? 2. Is the comparability of the effects of these two types of exercise maintained beyond the intervention period?					(SMD -0.4, 95% CI -1.3 to 0.4, I ² = 66%); participation results imprecise (MD -5 points, 95% CI -19 to 10).
Nascimento 2024 ³³	Research questions for this systematic review were: 1. In people with Parkinson's disease, what is the effect of adding external cueing (i.e. visual, auditory or somatosensorial cueing) to walking training compared with walking training alone in terms of walking, mobility, balance, fear of falling and freezing? 2. Are any benefits carried over to participation or maintained beyond the intervention period?	Parkinson	Physiotherapist	Multimodal	9–40 consultations / 10–60 mins	Physical: Walking speed improved by 0.09 m/s (95% CI 0.02 to 0.15); stride length may have improved by 5 cm (95% CI -2 to 11); cadence showed negligible effects (MD 2 steps/minute; 95% CI -12 to 16). Functional: Mobility showed negligible effects (MD -0.2 s; 95% CI -1.0 to 0.6); balance showed negligible effects (MD 1 point out of 56; 95% CI -3 to 6). Psychological/emotional: Fear of falling was measured but results not reported.
Nascimento 2025 ¹⁰³	To examine the effects of the addition of mobilisation with movement to commonly used exercises in physiotherapy for improving ankle range of motion and walking in people who have had a stroke.	Stroke	Physiotherapist	Multimodal	8–25 consultations / 30–60 mins	Physical: Ankle range of motion improved by 4° (95% CI 2 to 6); walking speed increased by 0.08 m/s (95% CI 0.05 to 0.11); cadence improved by 9 steps/min (95% CI 7 to 12); step length increased by 5 cm (95% CI 3 to 7).
Nayak 2020 ¹⁰⁴	The study aimed to determine the effect of aquatic therapy on balance and gait in stroke survivors, and to summarise the evidence for commonly delivered aquatic therapy techniques and dosage of intervention for improving balance and gait in stroke survivors.	Stroke	Physiotherapist	Multimodal	10–40 consultations / 30–60 mins	Physical: Balance improved (MD 3.23, 95% CI 1.06, 5.39; p = 0.004) when delivered alone; gait speed improved (MD 0.77, 95% CI 0.25, 1.29; p = 0.004) when delivered alone; cadence improved (MD 4.41, 95% CI 0.82, 8.00; p = 0.02) when delivered as an adjunct to land-based therapy.
Nindorera 2022 ¹⁰⁵	To review and quantify the effects of various walking training protocols vs other physical exercises for improving balance, motor functions, walking endurance, walking speed, participation and quality of life in people with chronic stroke.	Stroke	Physiotherapist; other	Exercise	12–36 consultations / 20–60 mins	Physical: Balance improved (SMD = 0.64 [0.06, 1.22], p = 0.03); motor function improved (SMD = 0.43 [0.16, 0.69], p = 0.002); walking endurance improved (SMD = 0.30 [0.13, 0.47], p < 0.001); walking speed improved (SMD = 0.09 [0.04, 0.14], p < 0.001). Functional: Health-related quality of life improved overall (SMD = 0.40 [0.06, 0.75], p = 0.02); quality of life improved with overground training (SMD = 0.46 [0.12, 0.80], p = 0.008); functional independence not significantly improved (SMD = 0.10 [-0.14, 0.34], p = 0.4); participation not significantly improved (SMD = 0.06 [-0.40, 0.52], p = 0.80).
Nindorera 2025 ¹⁰⁶	To evaluate the effects of different exercise training modalities on maximal and sub-maximal physical fitness in chronic stroke patients, determine the optimal training dosage, update existing evidence on the effectiveness of various physical exercise training protocols in chronic stroke rehabilitation, and guide clinical assessment practices based on targeted training outcomes.	Stroke	Physiotherapist	Exercise	4–120 consultations / 10–50 mins	Physical: VO ₂ peak/max improved (MD = 3.16 [2.83, 3.49], p < 0.00001); walking endurance improved (6MWT, MD = 34.30 [25.08, 43.53] meters, p < 0.00001).
Noguchi 2025 ¹⁶	The objectives of this systematic review were to examine (1) the effects of strength training on patient-important stroke	Stroke	Physiotherapist	Exercise	1–260 consultations / 30–90 mins	Physical: Walking capacity improved (SMD=0.95, 95% CI 0.34-1.56, p=0.002); balance improved (SMD=1.13, 95% CI 0.51-1.75, p=0.001); lower body strength improved (SMD=1.25, 95% CI 0.64-1.85, p<0.001); habitual

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	recovery outcomes informed by an advisory group of community members with lived experience; and (2) the association between strength training prescription parameters (frequency, intensity, type and duration) and stroke recovery.					walking speed increased (no specific values provided); fast-paced walking speed improved (no specific values provided). Functional: Functional ability and mobility improved (SMD=0.61, 95% CI 0.09-1.14); (Instrumental) Activities of Daily Living (ADL/IADL) disability improved (SMD=0.50, 95% CI 0.05-0.94, p=0.03). Psychological/emotional: Falls efficacy improved (small to very large effects, not statistically significant); psychological wellbeing improved (small to very large effects, not statistically significant). Other: Health-related quality of life improved (small to very large effects, not statistically significant); physical activity levels improved (small to very large effects, not statistically significant); functional strength and power improved (small to very large effects, not statistically significant).
Okamura 2023 ¹⁰⁷	This study aimed to conduct a meta-analysis to evaluate the effects of virtual reality mirror therapy (VRMT) on upper extremity dysfunction in patients with stroke.	Stroke	Occupational therapist; physiotherapist; other	Multimodal	4–45 consultations / 30–60 mins	Physical: Fugl-Meyer assessment upper extremity test (FMA-UE) improved (SMD = 0.81, 95% CI: 0.52-1.10, p < 0.001); box and block test (BBT) improved (SMD = 0.48, 95% CI: 0.16-0.80, p = 0.003); motor function test (MFT) improved (SMD = 0.72, 95% CI: 0.05-1.40, p = 0.04).
Oliveira 2024 ¹⁰⁸	This systematic review aimed to determine which interventions increase physical activity and decrease sedentary behaviour based on objective measures of movement behaviour in individuals with stroke.	Stroke	Physiotherapist; other	Multimodal	24–72 consultations / 40–80 mins	Physical: Daily steps increased (SMD=0.65, P=.0002); time spent on moderate-to-vigorous intensity physical activities (MVPA) increased (SMD=0.68, P=.0004). Other: Time spent on sedentary behaviour decreased (statistically significant). Note: These outcomes are specific to different interventions and stroke phases—combined interventions (exercise plus behaviour change techniques) for acute/subacute stroke, and exercise-only for chronic stroke.
Omar Ahmad 2023 ¹⁰⁹	The purpose of this meta-analysis was to determine the effectiveness of exercise interventions at alleviating Parkinson's Disease (PD) symptoms, as measured by the Unified Parkinson's Disease Rating Scale (UPDRS), and to qualitatively explore whether endurance-based or non-endurance-based exercise interventions were more beneficial at alleviating PD symptoms.	Parkinson	Physiotherapist; occupational therapist	Multimodal	Not reported / 60–120 mins	Other: Overall positive effect of therapeutic exercise (d-index = 0.155, CI95% 0.0791- 0.2308, p < 0.05); no qualitative difference observed between aerobic and non-aerobic forms of exercise.
Özden 2023 ¹¹⁰	The purpose of this systematic review and meta-analysis was to demonstrate the effectiveness of pelvic floor muscle training (PFMT) for urinary incontinence in patients with stroke.	Stroke	Not reported	Multimodal	Not reported / 50–60 mins	Physical: Daytime voiding frequency improved (ES 0.28, 95% CI 0.04-1.16); 24-h pad test showed positive results for PFMT group. Functional: SF-36-Social Function score not superior to standard therapy at 12-week follow-up (ES 0.47, 95% CI -0.16-0.96); no additional advantage on 3 days voiding diary (night, total day) score at 12-week follow-up. Other: Urinary incontinence improved.
Pai 2023 ¹¹¹	The study aimed to systematically map the evidence on the relationship between trunk control and respiratory function, and determine the effect of respiratory muscle training on trunk control for stroke survivors, with specific research questions: (1) What is the association between trunk control and respiratory function? (2) What is the effect of the respiratory function training on trunk control?	Stroke	Physiotherapist; mental health nurse; other	Multimodal	9–40 consultations/ 25–30 mins	Physical: Forced vital capacity (FVC) improved (effect size 0.21-0.39); forced expiratory volume during the first breath (FEV1) improved (effect size 0.21-0.39); maximal inspiratory pressure (MIP) improved (effect size 0.21-0.39); maximal expiratory pressure (MEP) improved (effect size 0.21-0.39); MIP and MEP significantly improved with interventions (p not specified); overall effect size for interventions: Cohen's d = 1.47 (95% CI: 0.46-2.48; I ² =86.0%, p=.004).

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Peng 2021 ¹¹²	To systematically review and determine the comparative effectiveness of virtual reality (VR) rehabilitation interventions vs conventional therapies (CTs) in restoring motor function of affected limbs, primarily upper limbs, among patients with subacute stroke.	Stroke	Physiotherapist; occupational therapist	Multimodal	Not reported / not reported	Physical: Motor function improved compared with preintervention (SMD = 1.14; 95% CI = 0.77-1.52; I2 = 82%; P < 0.001); motor function mildly improved compared with CT (SMD = 0.47; 95% CI = 0.22-0.72; I2 = 75%; P < 0.001), but insignificant after adjustment (SMD = 0.08; 95% CI = -0.16 to 0.33; I2 = 82.6%; P < 0.001). Other: Feasibility—Excellent participation in 3 patients, very good in 1 patient for VR-based intervention (6 consultations of 30 min).
Penna 2021 ¹¹³	To investigate the impact of aerobic exercise on neuroplasticity in patients with stroke sequelae.	Stroke	Physiotherapist; exercise physiologist	Multimodal	20–24 consultations / 45–85 mins	Physical: Aerobic exercise after stroke may influence neuroplasticity, with functional resonance (fMRI) and cortical excitability studies showing mixed results but indicating possible neural network changes. Combining aerobic exercise with cognitive training appears to enhance cognitive domains related to motor learning, while findings on neurotrophic factors remain inconsistent.
Pérez-Rodríguez 2022 ¹¹⁴	The aims of this systematic review and meta-analyses were to evaluate the effects of exercise on the functional capacity and quality of life (QoL) of people with acquired brain injury (ABI) and to analyse the influence of training variables.	Stroke	Not reported	Exercise	Not reported / 30–120 mins	Physical: Walking endurance improved (z score = 2.84); gait speed improved (z score = 2.01); Berg Balance Scale showed moderate increase (SMD = 0.65; 95% CI = 0.36-0.94; P < .001). Functional: Quality of life physical subscale improved (z score = 3.42; SMD = 0.60; 95% CI = 0.37-0.97; P = .001); quality of life mental subscale improved (z score = 3.00; P = .003).
Prat-Luri 2020 ¹¹⁵	The aim of this systematic review was to analyse the influence of potential effect modifiers (initial trunk impairment, participant's age, start of intervention after stroke onset and total volume of additional trunk-focused training programs) on trunk function, balance ability, gait performance and functional mobility in stroke patients, with the goal of optimising stroke rehabilitation programs.	Stroke	Physiotherapist; occupational therapist; speech pathologist; other	Multimodal	Not reported / 10–60 mins	Physical: Trunk function improved (SMD 1.06, CI 0.74-1.37); balance ability improved (SMD 0.83, CI 0.52-1.14); lateral reach of affected arm improved (SMD 0.89, CI 0.26-1.52); lateral reach of non-affected arm improved (SMD 1.16, CI 0.67-1.66); forward reach of unaffected arm improved (SMD 0.90, CI 0.47-1.33). Functional: Gait performance improved (SMD 0.63, CI 0.38-0.89); functional mobility improved (effect size not specified).
Qureshi 2021 ¹¹⁶	The purpose of this systematic review was to examine the literature on non-pharmacological therapies for pain in Parkinson's Disease (PD), highlight complementary procedures and therapies available for managing pain in PD patients, and provide suggestions for pain treatment.	Parkinson	Physiotherapist; other	Multimodal	10–16 consultations / not reported	Physical: Pain reduction (statistically significant in 7 studies, p < .05); minimum 20% pain reduction in 17 studies; bradykinesia score decreased (upper limb: 4.5 points, lower limb: 2.5 points); rigidity score reduced (2.6 points); cervical flexion reduced at 8 weeks (p = 0.004) and 16 weeks (p = 0.001); dorsal flexion reduced; muscle stiffness reduced (p = .001); difficulty in movement reduced (p = .0019); shoulder pain reduced (p = .0047).
Racey 2022 ⁴³	The goal of this systematic review and meta-analysis was to determine the effects of health coaching on adults with type 2 diabetes based on quadruple aim outcomes and to assess the implementation of these interventions, including describing the diabetes health coaching intervention and in what context.	Diabetes	Psychologist; dietitian; other	Multimodal	5–9 consultations / 15–90 mins	Physical: A1C reduced by 0.24 (95% CI, -0.38 to -0.09); BMI reduced by 0.19 (95% CI, -0.35 to -0.03), however this effect not maintained at long-term follow-up; waist circumference reduced by 0.24 (95% CI, -0.41 to -0.07), however not maintained at follow-up; reduction of body weight of 0.19 (95% CI -0.30 to -0.08), no significant effect at follow-up; systolic blood pressure decreased by 0.28 (95% CI -0.40 to -0.16) immediately post-treatment, maintained at long-term follow-up. Psychological/emotional: Depression/distress levels decreased by 0.21 (95% CI, -0.41 to -0.02) immediately post-treatment; no significant effect at long-term follow-up.
Racey 2022 (2) ⁴¹	This review examined the application and reporting of the RE-AIM (Reach, Effectiveness, Adoption, Implementation and Maintenance) components in diabetes	Diabetes	Diabetes educator; dietitian; mental health nurse; psychologist; other	Multimodal	Not reported / 15–90 mins	Other: RE-AIM reporting was inconsistent, with 12 criteria covered by all studies and 21 not reported at all.

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	health coaching interventions for adults with type 2 diabetes, to inform the feasibility and scalability of future diabetes health coaching work. The review leverages findings from a recently completed systematic review and meta-analysis on the effectiveness of diabetes health coaching trials.					
Richardson 2021 ¹¹⁷	The objective was to evaluate and compare the effects of unilateral and bilateral motor training on upper limb motor function in chronic stroke patients, to investigate whether these approaches improve upper limb function in adults post chronic stroke, and to determine the comparative effectiveness of these rehabilitation approaches.	Stroke	Not reported	Multimodal	15–40 consultations / 20–120 mins	Physical: Fugl-Meyer Assessment (FMA) no significant between-group differences in most studies (p=0.19 at 12 weeks in one study), within-group improvements noted (p<0.001 in one study); Box and Block Test (BBT) improved (p=0.04 in one study). Functional: Modified Wolf Motor Function Test (MWMFT) improved (p=0.011 at 12 weeks); University of Maryland Arm Questionnaire for Stroke (UMACS) improved (p=0.015 at 12 weeks); Modified Barthel Index (MBI) improved (p=0.02 in one study).
Rodríguez-Bailón 2022 ¹¹⁸	To analyse the effects of client-centred practice in occupational therapy compared with conventional rehabilitation on occupational performance and participation among people with stroke and traumatic brain injury.	Stroke	Occupational therapist	Multimodal	5–21 consultations / not reported	Functional: Satisfaction with occupational performance improved (large effect sizes: 1.31 and 2.35); Activities of Daily Living (ADL) showed no significant improvement; perceived participation showed no significant differences between groups. Psychological/emotional: Life satisfaction showed no significant improvement; depression levels showed no significant reduction; emotion domain on Stroke Impact Scale improved significantly in one study. Other: Caregiver burden showed no significant change.
Salse-Batán 2022 ³⁷	This study aimed to update the existing scientific evidence on the benefits of Nordic walking (NW) in people with Parkinson's disease (PD) by conducting a systematic review and meta-analysis of available randomised controlled trials (RCTs) to evaluate the effectiveness of NW as a rehabilitation strategy for PD.	Parkinson	Not reported	Exercise	16–120 consultations / 35–90 mins	Physical: Statistically significant improvements in motor impairment (WMD=4.15 points; SMD=0.68), mobility (Timed Up and Go: WMD=1.75s faster; SMD=0.77), balance (Berg Balance Scale: WMD=4.10 points; SMD=0.94), gait and walking ability (10-m walk: WMD=1.51s faster; SMD=0.58) and physical fitness (6-min walk: WMD=+62.14m; SMD=0.76). Most changes were not clinically meaningful except for walking ability. Functional: Improved quality of life (SMD=0.38) and non-motor symptoms. Other: Good adherence (70%–100%) and occasional minor adverse events (e.g. falls, hypotension).
Sanchez 2024 ¹¹⁹	This study determined the effectiveness of CIMT using telerehabilitation compared with traditional CIMT in improving mild to moderate upper limb motor function in adult patients with chronic stroke, as well as determined the adverse events associated with both telerehabilitation CIMT and traditional CIMT.	Stroke	Not reported	Multimodal	Not reported / Not reported	Physical: Wolf Motor Function Test showed no significant difference between telerehabilitation constraint-induced movement therapy (CIMT) and traditional CIMT (mean difference [95% CI]: -0.04 [-0.42, 0.33])
Sánchez Silverio 2022 ¹²⁰	To determine the effect of action observation (AO) training on the walking ability of patients post stroke.	Stroke	Physiotherapist	Multimodal	16–40 consultations / not reported	Physical: Walking ability improved (confirmed by clinical measures and gait parameters); gait speed significantly improved (p-value not reported). Functional: Timed Up and Go Test improved (specific values not reported); 10-Metre Walk Test improved (specific values not reported); all clinical measures and gait parameters showed significant improvements between pre-test and post-test in AO groups (p-value not reported).
Saunders 2020 ²⁵	The primary objectives were to determine whether fitness training after stroke reduces death, death or dependence, and	Stroke	Physiotherapist; exercise physiologist	Exercise	6–72 consultations / 10–120 mins	Physical: Cardiorespiratory training significantly improved disability scores at end of intervention (SMD 0.52; 95% CI 0.19 to 0.84; P = 0.002; 8 RCTs) and increased peak VO ₂ (MD +3.40 mL/kg/min; 95% CI 2.98 to 3.83; P < 0.001; 9

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
	disability. The secondary objectives were to determine the effects of training on adverse events, risk factors, physical fitness, mobility, physical function, health status and quality of life, mood and cognitive function.					RCTs), with high-certainty evidence for mobility gains: preferred gait speed (MD +4.47 m/min; 95% CI 2.07 to 6.87; 12 RCTs) and 6-minute walk distance (MD +33.4 m; 95% CI 19.0 to 47.8; 16 RCTs). Mixed training showed a smaller but significant effect on disability (SMD 0.23; 95% CI 0.03 to 0.42; P = 0.02; 9 RCTs) and improved gait speed (MD +4.71 m/min; 95% CI 1.32 to 8.10; 10 RCTs) and endurance (MD +35 m; 95% CI 15.9 to 54.1; 10 RCTs). Resistance training improved muscle strength (e.g. knee flexion SMD 0.72; 95% CI 0.10 to 1.34) but showed limited effects on disability or gait.
Shahien 2023 ¹²¹	The aim of this systematic review was to synthesise evidence from published studies on the efficacy of physical therapy techniques for reducing hand tremors in patients with Parkinson's disease.	Parkinson	Not reported	Multimodal	1–56 consultations / 35–45 mins	Physical: The tremor's glove and electrical stimulation showed significant improvements in root mean square angular velocity (59% and 43.8%, respectively) and Unified Parkinson Disease Rating Scale (UPDRS) tremor score (P<0.05).
Siopis 2021 ⁴²	This review aimed to compare the effectiveness of nutrition therapy delivered by dietitians with nutrition advice delivered by other healthcare professionals in adults with type 2 diabetes on metabolic parameters, specifically haemoglobin A1c (HbA1c), body mass index (BMI), weight, low-density lipoprotein (LDL) cholesterol and blood pressure (BP), through a systematic literature review of randomised controlled trials (RCTs) and meta-analysis.	Diabetes	Dietitian; other	Multimodal	4–10 consultations / 30–60 mins	Physical: The mean changes [95% CI] at follow-up in HbA1c, BMI, weight, LDL cholesterol, systolic and diastolic blood pressure were -0.47 [-0.92, -0.02] %, -0.38 [-0.63, -0.13] kg/m ² , -1.49 [-2.14, -0.84] kg, -0.15 [-0.33, 0.04] mmol/L, -0.75 [-2.45, 0.96] mm Hg and -1.17 [-4.52, 2.17] mm Hg respectively in favour of the intervention group.
Song 2024 ¹²²	To evaluate the effect of wearable device training on improving upper limb motor function in stroke patients, and to systematically compare the effects of different types of wearable devices through a network meta-analysis, including the impact on limb motor dysfunction, hand dexterity, arm and hand function, and daily arm use.	Stroke	Physiotherapist; occupational therapist	Multimodal	6–40 consultations / 30–60 mins	Physical: Fugl-Meyer Assessment (FMA-UE) improved (SMD 0.26, 95% CI 0.07, 0.45); Box and Block Test (BBT) improved (SMD 0.43, 95% CI 0.17, 0.69); Action Research Arm Test (ARAT) no significant difference (SMD 0.20, 95% CI -0.15, 0.55); Modified Ashworth Scale (MAS) no significant difference (MD -0.08, 95% CI -0.81, 0.64). Functional: Motor Activity Log (MAL) no significant difference (MD 0.32, 95% CI -0.54, 0.33).
Souza 2021 ¹²³	To identify the main treatments currently used by occupational therapists for pain in the shoulder after a stroke, and to conduct a systematic review and meta-analysis to analyse these protocols.	Stroke	Occupational therapist	Multimodal	3–30 consultations / 15–20 mins	Physical: Pain decreased (MD -2.08; 95% CI -3.23, -0.93; P = 0.0004); Range of motion improved overall (MD 4.67; 95% CI 1.54, 7.79; P = 0.0003), specifically in shoulder flexion (MD 5.14; 95% CI 1.74, 8.75; P = 0.003), but not in abduction (MD 1.81; 95% CI -9.34, 12.97; P = 0.75) or external rotation (MD 2.48; 95% CI -8.53, 13.48; P = 0.66). Functional: Upper limb function improved (MD 1.84; 95% CI 0.52, 3.16; P = 0.006), specifically in Fugl-Meyer score (MD 1.80; 95% CI 0.46, 3.14; P = 0.009).
Tai 2022 ¹²⁴	The aim of this study was to conduct a systematic review to investigate the effects of exercise on sleep quality and fatigue in people with chronic stroke.	Stroke	Not reported	Exercise	15–76 consultations / 20–60 mins	Psychological/emotional: Insomnia severity decreased (scored below cut-off post-intervention for stroke survivors); sleep-onset latency improved (d = 0.360) for stroke participants; total sleep time improved (d = 0.355) for stroke participants; subjective sleep improved significantly for exercise plus electrical stimulation group compared with control. Functional: Fatigue reduced significantly in intervention group compared with controls; fatigue symptoms reduced with large effect immediately post-intervention, but effect lost after 20 weeks.

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
The RELEASE Collaborators 2022 ⁶⁰	To explore associations between speech and language therapy (SLT) frequency (days/week), intensity (hours/week) and dosage (total SLT-hours), and language outcomes (overall-language ability, auditory comprehension, functional communication) across subgroups defined by age, sex, aphasia severity, and time since stroke.	Stroke	Speech pathologist; other	Multimodal	Not reported / not reported	Other: Overall-language ability improved (mean difference = 15.1 [8.2, 22.1] for ≤ 65 years; 17.2 [3.9, 30.5] for > 65 years); auditory comprehension improved (mean difference = 6.8 [2.3, 11.2] for ≤ 65 years; 8.5 [2.0, 14.9] for > 65 years); functional communication improved (mean difference = 1.2 [0.3, 2.1] for ≤ 65 years; 0.8 [0.2, 1.4] for > 65 years).
Tofani 2020 ³⁸	To review studies assessing the efficacy of occupational therapy interventions on quality of life in patients with Parkinson's disease, evaluate the scientific evidence underlying the effect of different OT interventions on quality of life measures, and review possible differences in the effect of OT in studies with short-term and long-term follow-up.	Parkinson	Occupational therapist; physiotherapist; speech pathologist	Multimodal	1–104 consultations / 15–36 mins	Functional: Quality of life improved (mean difference = -2.08 at 2–3 months, mean difference = -2.56 at 6–12 months; P < 0.00001); mobility improved (P < 0.01); ADL improved (P < 0.01); emotional wellbeing improved (P < 0.01); cognition improved (P < 0.05); communication improved (P < 0.01).
Vásquez-Carrasco 2025 ¹²⁵	This systematic review with meta-analysis aimed to evaluate and synthesize the scientific evidence of occupational therapy (OT) interventions on activities of daily living (ADL), cognitive functions, and physical function in middle-aged and older people with chronic stroke.	Stroke	Occupational therapist	Multimodal	10-40 consultations / 30-60 mins	Functional: ADL performance improved significantly as measured by COPM (p = 0.03)
Veldema 2020 ¹²⁶	This systematic review and meta-analysis investigated the effects of resistance training in supporting the recovery in stroke patients, comparing it with no intervention, other interventions, and different resistance training protocols.	Stroke	Not reported	Exercise	6–66 consultations / Not reported	Physical: Timed Up and Go improved; Ten Metre Walk Test improved; Stair Up and Down improved; muscular force increased (hip flexion, hip extension); maximal concentric force increased (leg press, knee extension—affected and non-affected side, ankle dorsiflexion—affected side, ankle plantar flexion—affected side); Sit-to-Stand Test improved; total body lean mass increased; ergometer/treadmill test (oxygen uptake at the ventilatory threshold) improved; total body percentage fat decreased; maximal isometric force increased (elbow flexion and extension—affected and non-affected side, knee extension—non-affected side). Functional: Health-related quality of life improved; independence and reintegration improved, Other: Other health-relevant physiological indicators improved; spasticity and hypertonia; cognitive abilities and emotional state; cardiorespiratory fitness.
Veldema 2021 ¹²⁷	The main aim of this systematic review and meta-analysis was to collect available evidence on aquatic therapy in stroke rehabilitation and investigate its effectiveness in supporting stroke recovery.	Stroke	Not reported	Exercise	6–40 consultations / 20–60 mins	Physical: Balance improved (greater effects than aquatic treadmill walking); walking ability improved; muscular strength improved; cardiorespiratory fitness improved; spasticity reduced; proprioception improved. Psychological/emotional: Emotional status improved (moderately effective). Functional: Health-related quality of life improved (moderately effective); ADL independence similar to land-based therapies. Other: Physiological indicators improved (highly effective).
Wang 2025 ¹²⁸	This study aimed to evaluate the efficacy of various digital interventions in improving post-stroke cognitive function and provide evidence-based support for clinical decision making.	Stroke	Physiotherapist; occupational therapist	Multimodal	Not reported / not reported	Physical: Compared with conventional rehabilitation or care (C), computer-assisted cognitive therapy (CACT) demonstrated significant superiority in Montreal Cognitive Assessment (MoCA) scores (mean difference [MD]=3.03, 95% CI 1.69 to 4.38; SUCRA=91.53%); while cognitive training (CCT) demonstrated no statistical difference (MD=0.70, 95% CI -0.88 to 2.28). The ordering is CACT>VR>RAT>CCT. For Mini-Mental State Examination

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
						(MMSE) scores, RAT ranked highest in efficacy (MD=5.99, 95% CI 3.20 to 8.79; SUCRA=99.44%); whereas both VR (MD=1.34, 95% CI -0.94 to 3.62) and CCT (MD=1.12, 95% CI -1.46 to 3.69) showed no significant improvement. The ordering is RAT>CACT>CCT>VR.
Wen 2022 ¹²⁹	The meta-analysis aimed to investigate the potential effect of backward walking training (BTW) on walking function improvement among stroke patients.	Stroke	Not reported	Exercise	8–36 consultations / 30–70 mins	Physical: 10-metre walk test (10MWT) improved by 0.11 metres/second (95% CI: 0.01, 0.21; p = 0.03); cadence increased by 4.00 steps/minute (95% CI: 0.99, 7.02; p < 0.01); Berg Balance Scale (BBS) improved by 4.38 points (95% CI: 2.60, 6.15; p < 0.01); paretic step length increased by 5.32 cm (95% CI: 1.97, 8.67; p < 0.01); stride length improved by 6.61 cm (95% CI: 0.70, 12.51; p = 0.03); no significant difference in paretic step time (WMD = -0.08 s, 95% CI: -0.20, 0.04; p = 0.20) or paretic single support (WMD = 2.14%, 95% CI: -0.90, 5.18; p = 0.17).
Yan 2025 ¹⁷	To evaluate whether multicomponent exercise (MCE) is more effective than single exercise in improving walking ability in patients with stroke.	Stroke	Physiotherapist; other	Multimodal	1–120 consultations / 20–120 mins	Physical: Gait speed improved (mean difference=0.11; 95% CI, 0.06–0.16); walking endurance improved with MCE consultations ≥60 minutes; balance ability not statistically significant.
Yang, F 2020 ¹³⁰	To assess the immediate and retention effects of controlled whole-body vibration (CWBV) training on fall risk factors (body balance, functional mobility and knee strength) in people at post-acute and chronic stages of stroke, and to examine whether CWBV dosage correlates with the effect size for these fall risk factors.	Stroke	Physiotherapist; other	Multimodal	Not reported / not reported	Physical: Body balance improved immediately after training (ES = 0.27, P = .03); functional mobility improved immediately after training (ES = 0.34, P = .02); knee strength showed mild improvement (ES = 0.08 and 0.11, respectively, for immediate and retention effect; P ≥ .68 for both).
Yang, Y 2023 ¹³¹	This study aimed to compare the effects of different exercises on motor symptoms, non-motor symptoms, muscle strength and fall prevention in the treatment of PD patients.	Parkinson	Not reported	Exercise	7–208 consultations / 15–60 mins	Physical: Freezing of gait improved (SMD = -0.55, 95% CI = -0.95 to -0.16, p = 0.006); Muscular strength improved (SMD = 1.9, 95% CI = 0.55-3.24, p = 0.006); gait velocity no significant difference (SMD = 0.25, 95% CI = -0.15-0.65, p = 0.22); stride length no significant difference (SMD = -0.42, 95% CI = -1.07-0.24, p = 0.22); TUG no significant difference (SMD = -0.85, 95% CI = -1.79 to 0.08, p = 0.07); Berg Balance Scale no significant difference (SMD = 0.31, 95% CI = -0.25 to 0.87, p = 0.28). Functional: Quality of life improved (SMD = -0.86, 95% CI = -1.66 to -0.06, p = 0.04).
Zha 2025 ¹³²	The aim of this network meta-analysis was to compare and rank the effectiveness of different exercise modalities on cardiorespiratory function or exercise efficiency in post-stroke patients.	Stroke	Not reported	Exercise	10–60 consultations / 30–90 mins	Physical: 6-min walk test improved (Aerobic Exercise and Gait Training (AEGT) most effective, Weighted Mean Difference (WMD): 60.56m higher than Aerobic Exercise (AE), 95% CI: 3.28 to 118.19); peak oxygen consumption improved (Aerobic Exercise with Respiratory Exercise (AERE) highest likelihood 90.01%, AE delta 2.87 ± 4.04 ml/kg/min); resting heart rate reduced (AERE most effective); maximum oxygen consumption, resting systolic blood pressure and resting diastolic blood pressure were assessed. Functional: Cardiorespiratory function improved (various exercise types beneficial)
Zhang, Q 2020 ¹³³	To evaluate the effect of adding trunk restraint to task-oriented rehabilitation on arm motor function and functional ability after stroke in patients at acute, subacute, or chronic phases.	Stroke	Not reported	Exercise	4–50 consultations / not reported	Physical: Motor Activity Log—amount of use improved by 0.39 (95% CI: 0.25-0.54); Motor Activity Log—quality of movement improved by 0.45 (95% CI: 0.27-0.63); Fugl-Meyer Assessment (upper extremity) improved by 1.09 (95% CI: 0.67-1.51); Action Research Arm test improved by 4.51 (95% CI: 2.49-6.54). Functional: Performance of activities of daily living improved by 1.70 (95% CI: 0.19-3.21).

Author year	Aim(s)	Condition	Allied health profession(s)	Intervention type	Range of number / duration of consultations	Summary of outcome findings
Zhang, X 2022 ²³	To assess the effects of dual-task training on gait and balance in stroke patients by identifying and analysing randomised controlled trials (RCTs) that examined dual-task training for gait and balance rehabilitation in stroke patients, including gait and balance parameters to evaluate the effectiveness of dual-task training, and provide a theoretical basis for the design of future dual-task training programs to improve walking ability in stroke patients.	Stroke	Physiotherapist; occupational therapist	Exercise	12–40 consultations / 15–90 mins	Physical: Compared with patients who received conventional rehabilitation therapy, those who received dual-task training showed greater improvement in step length (MD =3.46, 95% CI [1.01, 5.92], P=0.006), cadence (MD =4.92, 95% CI [3.10, 6.74], P < 0.001) and Berg Balance Scale score (MD =3.10, 95% CI [0.11, 6.09], P =0.040). There were no differences in the improvements in gait speed (MD =2.89, 95% CI [-2.02, 7.80], P=0.250) and Timed Up and Go test (MD =-2.62, 95% CI [-7.94, 2.71], P=0.340) between dual-task and control groups.
Zhou 2024 ³⁰	This study aimed to investigate the effect of exercise on balance function in stroke patients and to determine the optimal exercise prescription for stroke patients.	Stroke	Not reported	Exercise	5–48 consultations / 8–75 mins	Physical: Berg Balance Scale (BBS) improved by 5.24 (WMD, P < 0.00001); Timed Up and Go test (TUG) improved by -2.91 (WMD, P < 0.00001).

Appendix 7—Data completeness, strength of evidence and risk of bias

Author year	Study—including design(s)	Data completeness		Evidence strength	Risk of bias
		No. of consults	Duration		
Studies examining dose-outcome relationship(s) as a main aim or via their analysis (n=4)					
El Hayek 2023 ⁴⁵	RCTs only				
Foster 2021 ³²	Other: RCTs, prospective cohort studies, retrospective case-control studies, ecological studies, two-group non-randomised studies, and one-group non-randomised pre-test–post-test studies				
Harvey 2022 ⁴⁶	RCTs and quasi-experiments				
Vecchio 2024 ⁴⁷	Other: RCTs, non-randomised controlled studies and observational studies				
Xie 2025 ³⁶	RCTs only				
Xu 2025 ⁴⁸	RCTs and longitudinal studies with controls				
All other studies included information on both dose and reported outcomes for relevant chronic conditions, yet may not have specifically examined the dose-outcome relationship(s)					
Ahrens 2023 ⁶¹	Other: RCTs and pre-post studies				
Alhwoaimel 2024 ⁶²	RCTs only				
Álvarez-Bueno 2023 ³¹	RCTs and longitudinal studies with controls and no randomisation				
Auger 2021 ⁶³	Other: RCTs, non-randomised controlled trials, cohort studies, case studies, and prospective studies				

Author year	Study—included design(s)	Data completeness		Evidence strength	Risk of bias
		No. of consults	Duration		
Boyne 2024 ⁶⁴	RCTs only				NR
Chan 2022 ⁶⁵	RCTs only				
Clark 2021 ¹⁹	RCTs only				
Cooper 2024 ³⁹	RCTs only				
Da Campo 2021 ²⁴	RCTs only				
De Abreu de Lima 2022 ⁶⁶	RCTs and longitudinal studies with controls				
De Almeida 2025 ⁶⁷	RCTs only				
Ernst 2023 ⁶⁸	RCTs only				
Feng 2025 ⁶⁹	RCTs only				
Flores 2021 ⁴⁰	RCTs and longitudinal studies with controls				NR
Gamborg 2022 ⁷⁰	RCTs only				
Gattoni 2025 ⁷¹	RCTs only				
Ghayour Najafabadi 2022 ⁷²	RCTs only				
Gibson 2022 ²⁸	RCTs only				

Author year	Study—included design(s)	Data completeness		Evidence strength	Risk of bias
		No. of consults	Duration		
Giuriati 2021 ⁷³	RCTs only				
Gollan 2022 ³⁴	RCTs only				
Huang 2025 ⁷⁴	RCTs only				
Huber 2022 ⁷⁵	RCTs only				
Huissoud 2024 ⁷⁶	RCTs only				
Kanika 2023 ⁷⁷	RCTs only				
Kashif 2022 ⁷⁸	RCTs only				
Khan 2024 ¹⁸	Other: RCTs, cohort studies (including cohort analysis from an RCT), and prospective observational studies				
Khattab 2021 ⁷⁹	RCTs only				
Kountoura 2025 ⁸⁰	RCTs only				
Krohn 2024 ⁸¹	RCTs only				
Lahude 2023 ⁸²	Other: RCTs, pilot studies (with and without control groups) and a mixed method study				
Landim 2024 ⁸³	RCTs only				
Lee 2020 ²⁰	RCTs and longitudinal studies with controls				NR

Author year	Study—included design(s)	Data completeness		Evidence strength	Risk of bias
		No. of consults	Duration		
Lee 2022 ²¹	Other: RCTs and crossover studies				
Li, G 2024 ²⁷	RCTs only				
Li, W 2023 ⁸⁴	RCTs only				
Li, X 2022 ⁸⁵	RCTs only				
Li, X 2025 ²⁶	RCTs only				
Li, Y 2021 ⁸⁶	RCTs only				
Li, Y 2022 ⁸⁷	RCTs only				
Li, Z 2024 ⁸⁸	RCTs only				
Lin 2024 ⁸⁹	RCTs only				
Lin 2025 ⁹⁰	RCTs only				
Liu, J 2025 ²⁹	RCTs only				
Liu, Y 2025 ⁹¹	RCTs only				
López-Liria 2023 ⁹²	RCTs only				
Lorenzo-García 2024 ⁹³	RCTs only				

Author year	Study—included design(s)	Data completeness			
		No. of consults	Duration	Evidence strength	Risk of bias
Mah 2022 ⁹⁴	RCTs only				
Malwanage 2024 ⁹⁵	RCTs only				
McGlinchey 2020 ⁹⁶	RCTs only				
Menahemi-Falkov 2022 ⁵⁸	Other: RCTs, pseudo-RCTs, non-RCTs, SCED studies, case-series, pre-post single-case studies, and interrupted time series with control group				
Menezes 2025 ⁹⁷	RCTs only				
Moreno-Ligero 2023 ⁹⁸	RCTs only				
Moreno-Segura 2022 ⁹⁹	RCTs only				
Muñoz-Gómez 2023 ¹⁰⁰	RCTs only				
Muñoz-Pardeza 2024 ⁴⁴	RCTs only				
Muñoz-Vigueras 2021 ⁵⁹	RCTs only				
Nascimento 2021 ²²	RCTs only				
Nascimento 2022 ¹⁰¹	RCTs only				
Nascimento 2022 (2) ¹⁰²	RCTs only				
Nascimento 2024 ³³	RCTs only				

Author year	Study—included design(s)	Data completeness			
		No. of consults	Duration	Evidence strength	Risk of bias
Nascimento 2025 ¹⁰³	RCTs only				
Nayak 2020 ¹⁰⁴	Other: RCTs, non-RCTs and quasi-RCTs				
Nindorera 2022 ¹⁰⁵	RCTs only				
Nindorera 2025 ¹⁰⁶	RCTs only				
Noguchi 2025 ¹⁶	RCTs only				
Okamura 2023 ¹⁰⁷	RCTs only				
Oliveira 2024 ¹⁰⁸	RCTs only				
Omar Ahmad 2023 ¹⁰⁹	Other: Various study designs including experimental and control groups				NR
Özden 2023 ¹¹⁰	RCTs and longitudinal studies with controls				
Pai 2023 ¹¹¹	Other: observational and interventional studies including correlational studies				
Peng 2021 ¹¹²	Other: RCTs, cohort study and crossover trial				
Penna 2021 ¹¹³	Other: randomised clinical trials, crossover studies and controlled prospective studies				
Pérez-Rodriguez 2022 ¹¹⁴	RCTs and longitudinal studies with controls				
Prat-Luri 2020 ¹¹⁵	RCTs only				

Author year	Study—included design(s)	Data completeness			
		No. of consults	Duration	Evidence strength	Risk of bias
Qureshi 2021 ¹¹⁶	Other: RCTs, non-randomised interventional studies and case reports/series				
Racey 2022 ⁴³	RCTs only				
Racey 2022 (2) ⁴¹	RCTs only				NR
Richardson 2021 ¹¹⁷	RCTs, cohort studies and cross-sectional study designs				
Rodríguez-Bailón 2022 ¹²⁰	RCTs only				
Salse-Batán 2022 ³⁷	RCTs only				
Sanchez 2024 ¹¹⁹	RCTs only				
Sánchez Silverio 2022 ¹²⁰	RCTs and longitudinal studies with controls				
Saunders 2020 ²⁵	RCTs only				
Shahien 2023 ¹²¹	Other: RCTs and single-arm clinical trials				
Siopis 2021 ⁴²	RCTs only				
Song 2024 ¹²²	RCTs only				
Souza 2021 ¹²³	RCTs only				
Tai 2022 ¹²⁴	Other: RCTs, non-randomised trials and pre-post studies				

Author year	Study—included design(s)	Data completeness			
		No. of consults	Duration	Evidence strength	Risk of bias
The RELEASE Collaborators 2022 ⁶⁰	RCTs only				
Tofani 2020 ³⁸	RCTs only				
Vásquez-Carrasco 2025 ¹²⁵	RCTs only				
Veldema 2020 ¹²⁶	RCTs only				
Veldema 2021 ¹²⁷	RCTs only				
Wang 2025 ¹²⁸	RCTs only				
Wen 2022 ¹²⁹	RCTs only				
Yan 2025 ¹⁷	RCTs only				
Yang, F 2020 ¹³⁰	RCTs only				
Yang, Y 2023 ¹³¹	RCTs only				
Zha 2025 ¹³²	RCTs only				
Zhang, Q 2020 ¹³³	RCTs only				
Zhang, X 2022 ²³	RCTs only				NR
Zhou 2024 ³⁰	RCTs only				

References

1. Institute for Health Metrics and Evaluation (IHME). *Global Burden of Disease 2023: Findings from the GBD 2023 Study*. Seattle, WA: IHME, Available at: <https://www.healthdata.org/research-analysis/gbd> (2025, accessed 7 December 2025).
2. Australian Bureau of Statistics. National Health Survey. *National Health Survey 2022*, <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/national-health-survey/2022> (2022, accessed 7 December 2025).
3. Australian Institute of Health and Welfare. Chronic Conditions and Multimorbidity. *Health conditions prevalence: Statistic from the National Health Survey 2022*, <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/health-conditions-prevalence/2022#multimorbidity> (accessed 8 December 2025).
4. Harrison C, Henderson J, Miller G, et al. The prevalence of diagnosed chronic conditions and multimorbidity in Australia: a method for estimating population prevalence from general practice patient encounter data. *PloS one* 2017; 12: e0172935.
5. Dennis S, Kwok W, Alison J, et al. How effective are allied health group interventions for the management of adults with long-term conditions? An umbrella review of systematic reviews and its applicability to the Australian primary health system. *BMC Prim Care* 2024; 25: 325.
6. Welberry H, Barr ML, Comino EJ, et al. Increasing use of general practice management and team care arrangements over time in New South Wales, Australia. *Australian Journal of Primary Health* 2019; 25: 168–175.
7. Cant RP, Foster MM. Investing in big ideas: utilisation and cost of Medicare Allied Health services in Australia under the Chronic Disease Management initiative in primary care. *Australian Health Review* 2011; 35: 468–474.
8. Barr ML, Welberry H, Comino EJ, et al. Understanding the use and impact of allied health services for people with chronic health conditions in Central and Eastern Sydney, Australia: a five-year longitudinal analysis. *Primary Health Care Research & Development* 2019; 20: e141.
9. Mackenzie L, Clemson L. Can chronic disease management plans including occupational therapy and physiotherapy services contribute to reducing falls risk in older people? *Australian Family Physician* 2014; 43: 211–215.
10. Vitry AI, Nguyen T, Ramsay E, et al. General practitioner management plans delaying time to next potentially preventable hospitalisation for patients with heart failure. *Internal Medicine Journal* 2014; 44: 1117–1123.
11. Wickramasinghe LK, Schattner P, Hibbert ME, et al. Impact on diabetes management of General Practice Management Plans, Team Care Arrangements and reviews. *Medical Journal of Australia* 2013; 199: 261–265.
12. Dennis S, Ball L, Harris M, et al. Allied health are key to improving health for people with chronic disease: but where are the outcomes and where is the strategy? *Australian Journal of Primary Health* 2021; 27: 437–441.
13. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology* 2005; 8: 19–32.

14. Aromataris E, Lockwood C, Porritt K, et al. (eds). *JBIM Manual for Evidence Synthesis*. JBI. Epub ahead of print 2024. DOI: 10.46658/JBIMES-24-01.
15. Covidence systematic review software, www.covidence.org.
16. Noguchi KS, Moncion K, Wiley E, et al. Prescribing strength training for stroke recovery: a systematic review and meta-analysis of randomised controlled trials. *Br J Sports Med* 2025; 59: 185–197.
17. Yan S, Zhang X, Zhang J, et al. Effect of a Multicomponent Exercise Intervention on Recovery of Walking Ability in Stroke Survivors: A Systematic Review With Meta-analysis. *Archives of Physical Medicine and Rehabilitation* 2025; 106: 124–133.
18. Khan M, Maag LM, Harnegie MP, et al. The effects of cycling on walking outcomes in adults with stroke: a systematic review. *Topics in Stroke Rehabilitation* 2024; 31: 259–271.
19. Clark B, Whittall J, Kwakkel G, et al. The effect of time spent in rehabilitation on activity limitation and impairment after stroke. *Cochrane Database of Systematic Reviews*; 2021. Epub ahead of print 25 October 2021. DOI: 10.1002/14651858.CD012612.pub2.
20. Lee J, Stone AJ. Combined Aerobic and Resistance Training for Cardiorespiratory Fitness, Muscle Strength, and Walking Capacity after Stroke: A Systematic Review and Meta-Analysis. *Journal of Stroke and Cerebrovascular Diseases* 2020; 29: 104498.
21. Lee KE, Choi M, Jeoung B. Effectiveness of Rehabilitation Exercise in Improving Physical Function of Stroke Patients: A Systematic Review. *IJERPH* 2022; 19: 12739.
22. Nascimento LR, Boening A, Galli A, et al. Treadmill walking improves walking speed and distance in ambulatory people after stroke and is not inferior to overground walking: a systematic review. *Journal of Physiotherapy* 2021; 67: 95–104.
23. Zhang X, Xu F, Shi H, et al. Effects of dual-task training on gait and balance in stroke patients: A meta-analysis. *Clin Rehabil* 2022; 36: 1186–1198.
24. Da Campo L, Hauck M, Marcolino MAZ, et al. Effects of aerobic exercise using cycle ergometry on balance and functional capacity in post-stroke patients: a systematic review and meta-analysis of randomised clinical trials. *Disability and Rehabilitation* 2021; 43: 1558–1564.
25. Saunders DH, Sanderson M, Hayes S, et al. Physical fitness training for stroke patients. *Cochrane Database of Systematic Reviews*; 2020. Epub ahead of print 20 March 2020. DOI: 10.1002/14651858.CD003316.pub7.
26. Li X, Wu C, Zhang J, et al. Home-Based Exercise for Improving Balance Ability in Post-Stroke Patients: A Systematic Review and Meta-Analysis. *Worldviews Ev Based Nurs* 2025; 22: e70057.
27. Li G, Tao X, Lei B, et al. Effects of exercise on post-stroke cognitive function: a systematic review and meta-analysis of randomized controlled trials. *Topics in Stroke Rehabilitation* 2024; 31: 645–666.
28. Gibson E, Koh C-L, Eames S, et al. Occupational therapy for cognitive impairment in stroke patients. *Cochrane Database of Systematic Reviews*; 2022. Epub ahead of print 29 March 2022. DOI: 10.1002/14651858.CD006430.pub3.
29. Liu J, Wang Z, Wang C, et al. Interventional effects of modified constraint-induced movement therapy on upper limb function in patients who had a stroke: systematic review and meta-analysis. *BMJ Open* 2025; 15: e094309.

30. Zhou Y, Ren H, Hou X, et al. The effect of exercise on balance function in stroke patients: a systematic review and meta-analysis of randomized controlled trials. *J Neurol* 2024; 271: 4751–4768.
31. Álvarez-Bueno C, Deeks JJ, Cervero-Redondo I, et al. Effect of Exercise on Motor Symptoms in Patients With Parkinson's Disease: A Network Meta-analysis. *Journal of Geriatric Physical Therapy* 2023; 46: E87–E105.
32. Foster ER, Carson LG, Archer J, et al. Occupational Therapy Interventions for Instrumental Activities of Daily Living for Adults With Parkinson's Disease: A Systematic Review. *The American Journal of Occupational Therapy* 2021; 75: 7503190030.
33. Nascimento LR, Boening A, Rocha RJ, et al. Walking training with auditory cueing improves walking speed more than walking training alone in ambulatory people with Parkinson's disease: a systematic review. *Journal of Physiotherapy* 2024; 70: 208–215.
34. Gollan R, Ernst M, Lieker E, et al. Effects of Resistance Training on Motor- and Non-Motor Symptoms in Patients with Parkinson's Disease: A Systematic Review and Meta-Analysis. *JPD* 2022; 12: 1783–1806.
35. Yang X, Wang Z. Effectiveness of Progressive Resistance Training in Parkinson's Disease: A Systematic Review and Meta-Analysis. *Eur Neurol* 2023; 86: 25–33.
36. Xie S, Yuan Y, Wang J, et al. Optimal dose and type of exercise improve walking velocity in adults with Parkinson's disease: a systematic review and Bayesian network meta-analysis. *Sci Rep* 2025; 15: 2239.
37. Salse-Batán J, Sanchez-Lastra MA, Suarez-Iglesias D, et al. Effects of Nordic walking in people with Parkinson's disease: A systematic review and META-ANALYSIS. *Health Social Care Comm*; 30. Epub ahead of print September 2022. DOI: 10.1111/hsc.13842.
38. Tofani M, Ranieri A, Fabbrini G, et al. Efficacy of Occupational Therapy Interventions on Quality of Life in Patients with Parkinson's Disease: A Systematic Review and Meta-Analysis. *Movement Disord Clin Pract* 2020; 7: 891–901.
39. Cooper ZW, O'Shields J, Ali MK, et al. Effects of Integrated Care Approaches to Address Co-occurring Depression and Diabetes: A Systematic Review and Meta-analysis. *Diabetes Care* 2024; 47: 2291–2304.
40. Flores EB, Reichert T, Farinha JB, et al. Exercise Training and Neuromuscular Parameters in Patients With Type 1 Diabetes: Systematic Review and Meta-Analysis. *Journal of Physical Activity and Health* 2021; 18: 748–756.
41. Racey M, Jovkovic M, Alliston P, et al. Applying the RE-AIM implementation framework to evaluate diabetes health coaching in individuals with type 2 diabetes: A systematic review and secondary analysis. *Front Endocrinol* 2022; 13: 1069436.
42. Siopis G, Colagiuri S, Allman-Farinelli M. Effectiveness of dietetic intervention for people with type 2 diabetes: A meta-analysis. *Clinical Nutrition* 2021; 40: 3114–3122.
43. Racey M, Jovkovic M, Alliston P, et al. Diabetes health coach in individuals with type 2 diabetes: A systematic review and meta analysis of quadruple aim outcomes. *Front Endocrinol* 2022; 13: 1069401.
44. Muñoz-Pardeza J, López-Gil JF, Huerta-Urbe N, et al. Nonpharmacological interventions on glycated haemoglobin in youth with type 1 diabetes: a Bayesian network meta-analysis. *Cardiovasc Diabetol* 2024; 23: 230.

45. El Hayek M, Lobo Jofili Lopes JLM, LeLaurin JH, et al. Type, Timing, Frequency, and Durability of Outcome of Physical Therapy for Parkinson Disease: A Systematic Review and Meta-Analysis. *JAMA Netw Open* 2023; 6: e2324860.
46. Harvey S, Carragher M, Dickey MW, et al. Dose effects in behavioural treatment of post-stroke aphasia: a systematic review and meta-analysis. *Disability and Rehabilitation* 2022; 44: 2548–2559.
47. Vecchio M, Chiaramonte R, De Sire A, et al. Do proprioceptive training strategies with dual-task exercises positively influence gait parameters in chronic stroke? A systematic review. *JRM* 2024; 56: jrm18396.
48. Xu S, Xu Y, Wen R, et al. Virtual Reality Enhanced Exercise Training in Upper Limb Function of Patients With Stroke: Meta-Analytic Study. *J Med Internet Res* 2025; 27: e66802.
49. Australian Aphasia Rehabilitation Pathway. Best Practice Statements - 2024, <https://www.aphasiapathway.com.au/?name=About-the-statements> (2024, accessed 15 November 2025).
50. Stroke Foundation. Australian and New Zealand Living Clinical Guidelines for Stroke Management, <https://informme.org.au/en/Guidelines/Clinical-Guidelines-for-Stroke-Management> (2025, accessed 15 November 2025).
51. NDIS. Annual pricing review, <https://www.ndis.gov.au/providers/pricing-arrangements/making-pricing-decisions/annual-pricing-review#apr> (2025, accessed 15 November 2025).
52. Kirkegaard A, Lepre B, Bartrim K, et al. Two decades of Medicare: An updated review of Medicare-subsidised dietetics services in Australia. *Nutrition & Dietetics* 2025; 1747–0080.70016.
53. Speech Pathology Australia. Speech pathology assessments and reports, <https://www.speechpathologyaustralia.org.au/Public/Public/services/Choose-a-speech-pathologist/Assessments-and-reports.aspx> (2024, accessed 15 November 2025).
54. Quantum Market Research. *MBS Allied Health Chronic Condition Management Review*. Melbourne, September 2025.
55. Shea BJ, Reeves BC, Wells G, et al. AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. *BMJ* 2017; j4008.
56. Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *bmj*; 372.
57. NZIR. *A critical missing ingredient: The case for increased dietetic input in tier 1 health services*. 21 April 2021.
58. Menahemi-Falkov M, Breitenstein C, Pierce JE, et al. A systematic review of maintenance following intensive therapy programs in chronic post-stroke aphasia: importance of individual response analysis. *Disability and Rehabilitation* 2022; 44: 5811–5826.
59. Muñoz-Vigueras N, Prados-Román E, Valenza MC, et al. Speech and language therapy treatment on hypokinetic dysarthria in Parkinson disease: Systematic review and meta-analysis. *Clin Rehabil* 2021; 35: 639–655.
60. The RELEASE Collaborators, Brady MC, Ali M, et al. Precision rehabilitation for aphasia by patient age, sex, aphasia severity, and time since stroke? A prespecified, systematic review-

- based, individual participant data, network, subgroup meta-analysis. *International Journal of Stroke* 2022; 17: 1067–1077.
61. Ahrens J, Shao R, Blackport D, et al. Cognitive -behavioral therapy for managing depressive and anxiety symptoms after stroke: a systematic review and meta-analysis. *Topics in Stroke Rehabilitation* 2023; 30: 368–383.
 62. Alhwoaimel NA, Alenazi AM, Alhowimel AS, et al. Effects of trunk exercises using virtual reality technology on trunk performance and impairment post stroke: a systematic review and meta-analysis. *Topics in Stroke Rehabilitation* 2024; 31: 399–408.
 63. Auger L-P, Grondin M, Aubertin M, et al. Interventions used by allied health professionals in sexual rehabilitation after stroke: A systematic review. *Topics in Stroke Rehabilitation* 2021; 28: 557–572.
 64. Boyne P, Miller A, Kubalak O, et al. Moderate to Vigorous Intensity Locomotor Training After Stroke: A Systematic Review and Meta-analysis of Mean Effects and Response Variability. *Journal of Neurologic Physical Therapy* 2024; 48: 15–26.
 65. Chan KGF, Jiang Y, Choo WT, et al. Effects of exergaming on functional outcomes in people with chronic stroke: A systematic review and meta-analysis. *Journal of Advanced Nursing* 2022; 78: 929–946.
 66. Lima VDAD, Menezes FJD, Celli LDR, et al. Effects of resistance training on the glycemic control of people with type 1 diabetes: a systematic review and meta-analysis. *Archives of Endocrinology and Metabolism*. Epub ahead of print 27 June 2022. DOI: 10.20945/2359-3997000000487.
 67. De Almeida SB, Tavares Sobreira ES, De Lucena Alves CP, et al. Effect of power training on physical functional performance of patients with Parkinson's disease: A systematic review and meta-analysis of randomized controlled trials. *PLoS ONE* 2025; 20: e0314058.
 68. Ernst M, Folkerts A-K, Gollan R, et al. Physical exercise for people with Parkinson's disease: a systematic review and network meta-analysis. *Cochrane Database of Systematic Reviews*; 2023. Epub ahead of print 5 January 2023. DOI: 10.1002/14651858.CD013856.pub2.
 69. Feng Q-M, Chen J-W. Effects of exercise combined with cognitive dual-task training on cognitive function and sustained effects in stroke patients: a systematic review and meta-analysis. *Disability and Rehabilitation* 2025; 47: 3538–3547.
 70. Gamborg M, Hvid LG, Dalgas U, et al. Parkinson's disease and intensive exercise therapy — An updated systematic review and meta-analysis. *Acta Neuro Scandinavica* 2022; 145: 504–528.
 71. Gattoni MF, Gobbo S, Feroldi S, et al. Identification of Cognitive Training for Individuals with Parkinson's Disease: A Systematic Review. *Brain Sciences* 2025; 15: 61.
 72. Ghayour Najafabadi M, Shariat A, Dommerholt J, et al. Aquatic Therapy for improving Lower Limbs Function in Post-stroke Survivors: A Systematic Review with Meta-Analysis. *Topics in Stroke Rehabilitation* 2022; 29: 473–489.
 73. Giuriati S, Servadio A, Temperoni G, et al. The effect of aquatic physical therapy in patients with stroke: A systematic review and meta-analysis. *Topics in Stroke Rehabilitation* 2021; 28: 19–32.
 74. Huang J, Wei Y, Zhou P, et al. Effect of Home-Based Virtual Reality Training on Upper Extremity Recovery in Patients With Stroke: Systematic Review. *J Med Internet Res* 2025; 27: e69003.

75. Huber SK, Knols RH, Arnet P, et al. Motor-cognitive intervention concepts can improve gait in chronic stroke, but their effect on cognitive functions is unclear: A systematic review with meta-analyses. *Neuroscience & Biobehavioral Reviews* 2022; 132: 818–837.
76. Huissoud M, Boussac M, Joineau K, et al. The effectiveness and safety of non-pharmacological intervention for pain management in Parkinson's disease: A systematic review. *Revue Neurologique* 2024; 180: 715–735.
77. Kanika, Goyal M, Goyal K. Effectiveness of the physiotherapy interventions on complex regional pain syndrome in patients with stroke: A systematic review and meta-analysis. *Journal of Bodywork and Movement Therapies* 2023; 35: 175–181.
78. Kashif M, Ahmad A, Bandpei MAM, et al. Systematic review of the application of virtual reality to improve balance, gait and motor function in patients with Parkinson's disease. *Medicine* 2022; 101: e29212.
79. Khattab S, Wiley E, Fang H, et al. The effects of exercise on cognition post-stroke: are there sex differences? A systematic review and meta-analysis. *Disability and Rehabilitation* 2021; 43: 3574–3591.
80. Kountoura A, Tegos T, Arnaoutoglou M, et al. Online Occupational Therapy as a Rehabilitation Intervention for Parkinson's Disease: A Systematized Review. *Clinics and Practice* 2025; 15: 98.
81. Krohn M, Rintala A, Immonen J, et al. The Effectiveness of Therapeutic Exercise Interventions With Virtual Reality on Balance and Walking Among Persons With Chronic Stroke: Systematic Review, Meta-Analysis, and Meta-Regression of Randomized Controlled Trials. *J Med Internet Res* 2024; 26: e59136.
82. Lahude AB, Souza Corrêa P, P. Cabeleira ME, et al. The impact of virtual reality on manual dexterity of Parkinson's disease subjects: a systematic review. *Disability and Rehabilitation: Assistive Technology* 2023; 18: 1237–1244.
83. Landim SF, López R, Caris A, et al. Effectiveness of Virtual Reality in Occupational Therapy for Post-Stroke Adults: A Systematic Review. *JCM* 2024; 13: 4615.
84. Li W, Luo Z, Jiang J, et al. The effects of exercise intervention on cognition and motor function in stroke survivors: a systematic review and meta-analysis. *Neurol Sci* 2023; 44: 1891–1903.
85. Li X, Geng D, Wang S, et al. Aerobic exercises and cognitive function in post-stroke patients: A systematic review with meta-analysis. *Medicine* 2022; 101: e31121.
86. Li Y, Song H, Shen L, et al. The efficacy and safety of moderate aerobic exercise for patients with Parkinson's disease: a systematic review and meta-analysis of randomized controlled trials. *Ann Palliat Med* 2021; 10: 2638–2649.
87. Li Y, Huang J, Li X, et al. Effect of Time-Dose-Matched Virtual Reality Therapy on Upper Limb Dysfunction in Patients Poststroke: A Meta-Analysis of Randomized Controlled Trials. *Archives of Physical Medicine and Rehabilitation* 2022; 103: 1131-1143.e7.
88. Li Z, Guo H, Yuan Y, et al. The effect of moderate and vigorous aerobic exercise training on the cognitive and walking ability among stroke patients during different periods: A systematic review and meta-analysis. *PLoS ONE* 2024; 19: e0298339.
89. Lin X, Zhang Y, Zhang X, et al. Comparing the effects of dual-task training and single-task training on walking, balance and cognitive functions in individuals with Parkinson's disease: A systematic review. *Chinese Medical Journal* 2024; 137: 1535–1543.

90. Lin X, Li H, Chen N, et al. Network Meta-Analysis of 4 Rehabilitation Methods With rTMS on Upper Limb Function and Daily Activities in Patients With Stroke. *Stroke* 2025; 56: 2644–2657.
91. Liu Y, Jiang M, Pan X, et al. Effects of exercise on mobility, balance and gait in patients with the chronic stroke: a systematic review and meta-analysis. *Sci Rep* 2025; 15: 24158.
92. López-Liria R, Vega-Tirado S, Valverde-Martínez MÁ, et al. Efficacy of Specific Trunk Exercises in the Balance Dysfunction of Patients with Parkinson's Disease: A Systematic Review and Meta-Analysis. *Sensors* 2023; 23: 1817.
93. Lorenzo-García P, Cavero-Redondo I, Núñez De Arenas-Arroyo S, et al. Effects of physical exercise interventions on balance, postural stability and general mobility in Parkinson's disease: a network meta-analysis. *JRM* 2024; 56: jrm10329.
94. Mah SM, Goodwill AM, Seow HC, et al. Evidence of High-Intensity Exercise on Lower Limb Functional Outcomes and Safety in Acute and Subacute Stroke Population: A Systematic Review. *IJERPH* 2022; 20: 153.
95. Malwanage KT, Dissanayaka TD, Allen NE, et al. Effect of Proprioceptive Training Compared With Other Interventions for Upper Limb Deficits in People With Parkinson Disease: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Archives of Physical Medicine and Rehabilitation* 2024; 105: 1364–1374.
96. McGlinchey MP, James J, McKeivitt C, et al. The effect of rehabilitation interventions on physical function and immobility-related complications in severe stroke: a systematic review. *BMJ Open* 2020; 10: e033642.
97. Menezes KK, Avelino PR, Ada L, et al. Backward walking training is as effective as or better than forward walking training for improving walking speed after stroke: a systematic review with meta-analysis. *Topics in Stroke Rehabilitation* 2025; 32: 531–543.
98. Moreno-Ligero M, Lucena-Anton D, Salazar A, et al. mHealth Impact on Gait and Dynamic Balance Outcomes in Neurorehabilitation: Systematic Review and Meta-analysis. *J Med Syst* 2023; 47: 75.
99. Moreno-Segura N, Martín-San Agustín R, García-Bafalluy S, et al. Effects of core training on trunk function, balance, and gait in stroke patients: A systematic review and meta-analysis of randomised controlled trials. *Clin Rehabil* 2022; 36: 1635–1654.
100. Muñoz-Gómez E, Inglés M, Aguilar-Rodríguez M, et al. Effects of mirror therapy on spasticity and sensory impairment after stroke: Systematic review and meta-analysis. *PM&R* 2023; 15: 1478–1492.
101. Nascimento LR, Gaviorno LF, De Souza Brunelli M, et al. Home-based is as effective as centre-based rehabilitation for improving upper limb motor recovery and activity limitations after stroke: A systematic review with meta-analysis. *Clin Rehabil* 2022; 36: 1565–1577.
102. Nascimento LR, Rocha RJ, Boening A, et al. Home-based exercises are as effective as equivalent doses of centre-based exercises for improving walking speed and balance after stroke: a systematic review. *Journal of Physiotherapy* 2022; 68: 174–181.
103. Nascimento LR, Boening A, Ribeiro I, et al. Mobilization with movement is effective for improving ankle range of motion and walking ability in individuals after stroke: A systematic review with meta-analysis. *PM&R* 2025; 17: 200–209.

104. Nayak P, Mahmood A, Natarajan M, et al. Effect of aquatic therapy on balance and gait in stroke survivors: A systematic review and meta-analysis. *Complementary Therapies in Clinical Practice* 2020; 39: 101110.
105. Nindorera F, Nduwimana I, Thonnard JL, et al. Effectiveness of walking training on balance, motor functions, activity, participation and quality of life in people with chronic stroke: a systematic review with meta-analysis and meta-regression of recent randomized controlled trials. *Disability and Rehabilitation* 2022; 44: 3760–3771.
106. Nindorera F, Leveque C, Meyer E, et al. Optimizing physical fitness in chronic stroke patients: the impact of exercise training modality and dosage on maximal and sub-maximal fitness – a systematic review and meta-analysis. *JRM* 2025; 57: jrm43359.
107. Okamura R, Nakashima A, Moriuchi T, et al. Effects of a virtual reality-based mirror therapy system on upper extremity rehabilitation after stroke: a systematic review and meta-analysis of randomized controlled trials. *Front Neurol* 2024; 14: 1298291.
108. Oliveira SG, Ribeiro JAM, Silva ÉSM, et al. Interventions to Change Movement Behaviors After Stroke: A Systematic Review and Meta-analysis. *Archives of Physical Medicine and Rehabilitation* 2024; 105: 381–410.
109. Omar Ahmad S, Longhurst J, Stiles D, et al. A meta-analysis of exercise intervention and the effect on Parkinson's Disease symptoms. *Neuroscience Letters* 2023; 801: 137162.
110. Özden F, Tümtürk İ, Özkeskin M, et al. The effect of pelvic floor muscle training on urinary incontinence in patients with stroke: a systematic review and meta-analysis. *Ir J Med Sci* 2023; 192: 1481–1495.
111. Pai H-C, Li C-C. Relationship Between Trunk Control Ability and Respiratory Function in Stroke Patients: A Scoping Review and Meta-Analysis. *Asian Nursing Research* 2023; 17: 61–69.
112. Peng Q, Yin L, Cao Y. Effectiveness of Virtual Reality in the Rehabilitation of Motor Function of Patients With Subacute Stroke: A Meta-Analysis. *Front Neurol* 2021; 12: 639535.
113. Penna LG, Pinheiro JP, Ramalho SHR, et al. Effects of aerobic physical exercise on neuroplasticity after stroke: systematic review. *Arq Neuro-Psiquiatr* 2021; 79: 832–843.
114. Pérez-Rodríguez M, Gutiérrez-Suárez A, Arias JÁR, et al. Effects of Exercise Programs on Functional Capacity and Quality of Life in People With Acquired Brain Injury: A Systematic Review and Meta-Analysis. *Physical Therapy* 2022; 103: pzac153.
115. Prat-Luri A, Moreno-Navarro P, García JA, et al. Do Initial Trunk Impairment, Age, Intervention Onset, and Training Volume Modulate the Effectiveness of Additional Trunk Exercise Programs after Stroke? A Systematic Review with Meta-Analyses. *IJERPH* 2020; 17: 8714.
116. Qureshi AR, Jamal MK, Rahman E, et al. Non-pharmacological therapies for pain management in Parkinson's disease: A systematic review. *Acta Neurol Scand* 2021; 144: 115–131.
117. Richardson MC, Tears C, Morris A, et al. The Effects of Unilateral Versus Bilateral Motor Training on Upper Limb Function in Adults with Chronic Stroke: A Systematic Review. *Journal of Stroke and Cerebrovascular Diseases* 2021; 30: 105617.
118. Rodríguez-Bailón M, López-González L, Merchán-Baeza JA. Client-centred practice in occupational therapy after stroke: A systematic review. *Scandinavian Journal of Occupational Therapy* 2022; 29: 89–103.

119. Sanchez L, Asuncion BM, Tayag KR, et al. Effectiveness of constraint-induced movement therapy (CIMT)—Telerehabilitation compared to traditional CIMT on upper extremity dysfunction of adult chronic stroke patients—A systematic review and meta-analysis. *Physiotherapy Res Intl* 2024; 29: e2090.
120. Sánchez Silverio V, Abuín Porras V, Rodríguez Costa I, et al. Effects of action observation training on the walking ability of patients post stroke: a systematic review. *Disability and Rehabilitation* 2022; 44: 7339–7348.
121. Shahien M, Elaraby A, Gamal M, et al. Physical therapy interventions for the management of hand tremors in patients with Parkinson's disease: a systematic review. *Neurol Sci* 2023; 44: 461–470.
122. Song Q, Qin Q, Suen LKP, et al. Effects of wearable device training on upper limb motor function in patients with stroke: a systematic review and meta-analysis. *J Int Med Res* 2024; 52: 03000605241285858.
123. Souza IGD, Souza RFD, Barbosa FDS, et al. Protocols Used by Occupational Therapists on Shoulder Pain after Stroke: Systematic Review and Meta-Analysis. *Occupational Therapy International* 2021; 2021: 1–9.
124. Tai D, Falck RS, Davis JC, et al. Can exercise training promote better sleep and reduced fatigue in people with chronic stroke? A systematic review. *Journal of Sleep Research* 2022; 31: e13675.
125. Vásquez-Carrasco E, Jamett-Oliva P, Hernandez-Martinez J, et al. Effectiveness of Occupational Therapy Interventions on Activities of Daily Living, Cognitive Function, and Physical Function in Middle-Aged and Older People with Chronic Stroke: A Systematic Review with Meta-Analysis. *JCM* 2025; 14: 2197.
126. Veldema J, Jansen P. Resistance training in stroke rehabilitation: systematic review and meta-analysis. *Clin Rehabil* 2020; 34: 1173–1197.
127. Veldema J, Jansen P. Aquatic therapy in stroke rehabilitation: systematic review and meta-analysis. *Acta Neurol Scand* 2021; 143: 221–241.
128. Wang C, Liu M. Digital Interventions for Cognitive Dysfunction in Patients With Stroke: Systematic Review and Meta-Analysis. *J Med Internet Res* 2025; 27: e73687–e73687.
129. Wen H, Wang M. Backward Walking Training Impacts Positive Effect on Improving Walking Capacity after Stroke: A Meta-Analysis. *IJERPH* 2022; 19: 3370.
130. Yang F, Butler AJ. Efficacy of Controlled Whole-Body Vibration Training on Improving Fall Risk Factors in Stroke Survivors: A Meta-analysis. *Neurorehabil Neural Repair* 2020; 34: 275–288.
131. Yang Y, Wang G, Zhang S, et al. Efficacy and evaluation of therapeutic exercises on adults with Parkinson's disease: a systematic review and network meta-analysis. *BMC Geriatr* 2022; 22: 813.
132. Zha F, Wen Q, Zhou M, et al. Comparative Effectiveness of Exercise on Cardiorespiratory Function or Exercise Efficiency After Stroke: A Network Meta-analysis of Randomized Control Trials. *Am J Phys Med Rehabil* 2025; 104: 219–225.
133. Zhang Q, Fu C, Liang Z, et al. The effect of adding trunk restraint to task-oriented training in improving function in stroke patients: A systematic review and meta-analysis. *NRE* 2020; 46: 95–108.