YHEC

York Health Economics Consortium

Providing consultancy and research in health economics for the NHS, pharmaceutical and health care industries since 1986

NICE

Overview of Systematic Reviews of Non-pharmacological Interventions for Dementia

Final Report

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Executive Summary

1. INTRODUCTION

The National Institute for Health and Care Excellence (NICE) contracted York Health Economics Consortium (YHEC) to provide a rapid overview of recent systematic reviews to inform the update of their 2006 guideline (CG42) on dementia. This overview summarises the interventions, outcomes, and conclusions from reviews which have evaluated non-pharmacological interventions to improve the cognitive functioning, functional ability and/or wellbeing of people living with dementia, defined as any progressive or permanent cognitive decline that has not been caused by an inappropriate intervention (i.e. human factors). It also highlights limitations and gaps in the available evidence.

2. METHODS

YHEC received literature search results from NICE and selected eligible systematic reviews that assessed non-pharmacological interventions which may have a positive impact on cognitive functioning, functional ability and/or wellbeing, compared with each other or standard care, in adults (aged 40 years and over) living with dementia in any setting (home, hospital or residential care). The reviews had to have been reported in English and published since March 2006. This overview specifically excluded studies of conditions that cause short-term cognitive decline (e.g. delirium), people with amnestic mild cognitive impairment (MCI); people with non-specific MCI if their Mini Mental State Examination (MMSE) score was greater than 20; interventions aimed at carers of patients with dementia, even if outcomes for people with dementia were reported; and interventions that addressed illness-emergent non-cognitive symptoms of dementia (e.g. anxiety, depression, agitation and aggression).

Randomised controlled trials (RCTs) published since the eligible systematic reviews had been undertaken were also identified and listed.

Systematic reviews were selected in a multi-stage process and high-level data were extracted. Where there were multiple systematic reviews for one topic, the most recent reviews where all relevant RCTs from earlier reviews had been included were selected. The quality (risk of bias) of each review was assessed using a modified version of the AMSTAR checklist. The study selection, data extraction and quality assessment processes were conducted by a single reviewer and a 10% sample of the records was checked at each stage by a second reviewer, with any disagreements resolved by consensus or by a third reviewer.

3. RESULTS

NICE provided 3462 records of potential systematic reviews, of which 447 were assessed based on the full text. 94 systematic reviews were eligible for the overview and 33 of the most recent reviews were data extracted. There were 10 reviews of nutritional supplements, five of cognitive rehabilitation, training and/or stimulation, five of exercise, two of multiple intervention types, and one each of occupational therapy, psychotherapy, reminiscence therapy, and support groups; the remaining seven reviews covered ‘‘other’ types of interventions (e.g. acupuncture, aromatherapy). Within each intervention category, the studies assessed a diverse range of interventions, with limited numbers of RCTs examining each. The main types of dementia noted in the included RCTs were dementia (varying severity or unspecified), Alzheimer’s disease (AD), vascular dementia, and mixed AD/vascular dementia.

Across the extracted reviews, the main risk of bias criteria (’a priori’ design, literature search and characteristics of the included studies) were well reported; few reviews provided details of the studies they had excluded. Overall, six reviews were considered to be of a ‘high’ quality, 25 reviews were considered ‘moderate’ quality and two reviews were considered ‘poor’ quality.

Nutritional supplements (10 reviews)

Ten reviews (Abdelhamid 2016, Yang 2016, Burckhardt 2016, Onakpoya 2015, Miroddi 2014, Li 2014, Yang 2013, Farina 2012, Mestre 2009, Lee 2009) investigated nutritional interventions in patients with varying types of dementia: general supplements/aids (one review), Ginkgo biloba (one), omega-3 polyunsaturated fatty acids (one), Souvenaid (one), Salvia species (one), vitamin B (one), Huperzine A (one), vitamin E (two), and ginseng (one). The reviews varied in size from one to 21 relevant studies. One large review of 20 RCTs found a significant benefit of Huperzine A, compared with placebo, in cognitive function on the MMSE and Wechsler Memory Scale, but not on the ADAS-Cog (one RCT only), up to 16 weeks and also improvements in the Activities of Daily Living Scale up to 12 weeks. Findings were similar for comparisons versus no treatment, psychotherapy or conventional medicine. Two very small reviews reported significant benefits of Salvia Officinalis L. and ginseng on cognition in patients with AD. One review of gingko biloba (12 RCTs) demonstrated inconsistent findings for cognition and activities of daily living, in comparison with placebo or conventional medicine, although one RCT reported positive effects on quality of life. Reviews of general supplements/aids (21 RCTs), omega-3 polyunsaturated fatty acids (three RCTs), Souvenaid (three RCTs), vitamin B (three RCTs) and vitamin E (both reviews, two and three RCTs) found no clear effects on cognition, functional ability or quality of life, where reported. Overall, few high-quality, recent RCTs have been identified for nutritional interventions, and the evidence for any of these interventions is unconvincing.

Cognitive rehabilitation, training and/or stimulation (5 reviews)

Five reviews (Bahar-Fuchs 2013, Carrion 2013, Woods 2012, Spector 2012, Huntley 2015) addressed the use of cognitive approaches in patients with dementia, of which two were Cochrane reviews (Bahar-Fuchs 2013, Woods 2012). There was one review of cognitive training and rehabilitation, one of cognition-orientated approaches, one of cognitive stimulation, and two studying several approaches. The reviews included 12 to 33 low-to-

moderate quality studies, but one review (Huntley 2015) included many of the studies from two other reviews (Woods 2012, Spector 2012); all three were extracted given the differences between them in terms of the interventions and outcomes assessed. Three reviews found no consistent evidence for the efficacy of cognitive training in improving cognitive functioning (11, 11 and four RCTs) or functional ability (one review, 11 RCTs) but some benefit of cognitive rehabilitation on activities of daily living (one RCT). Another review found better cognition in patients receiving reality orientation (nine RCTs) or skills training (eight trials), but no significant improvement in functional ability (two RCTs), and mixed effects on quality of life (two trials). All three reviews of cognitive stimulation approaches (21, 14 and six RCTs) found a clear benefit on cognitive function compared with no treatment or placebo, but no effect on functional ability or quality of life, where measured. Overall, there is evidence that cognitive stimulation improves cognitive function, but no strong evidence for other cognitive approaches.

Exercise (5 reviews)

The five reviews (Brett 2016, Forbes 2015, Groot 2016, Kiepe 2012, Wayne 2014) included three to 18 relevant RCTs of variable quality. One review was a Cochrane Review (Forbes 2015). Diverse physical exercise programmes were studied, but typically involved mainly aerobic/non-aerobic exercises, strength/balance exercise programmes, walking, dance/movement, and tai chi. Outcome measures varied widely. Overall, no consistent findings were reported. Four of the reviews found exercise interventions had beneficial effects on cognition, whereas the fifth revealed no benefit of exercise programmes. Improvements in activities of daily living were also observed in three of the four reviews, but these were generally small. Two reviews reported positive effects for at least one measure of quality of life. The current evidence suggests that physical activity offers potential benefit for patients with dementia.

Occupational therapy (1 review)

A recent review (Ojagbemi 2016) concluded that current evidence does not support the specific use of occupational therapy interventions to improve quality of life in patients with dementia. Three of the eight identified RCTs reported a significant benefit of occupational therapy compared with controls (e.g. usual care, including medication), but the remaining five trials found no significant difference between groups.

Psychotherapy (1 review)

A recent review (Cheston 2016) found 16 RCTs assessing a range of individual and group psychotherapy in people affected by Alzheimer's disease, vascular dementia, Lewy-body dementia, or a mixed condition. The results, from the few trials reporting them, were inconclusive for cognitive and functional outcomes. Compared with usual care, improvements in quality of life were observed with cognitive behavioural therapy (one RCT), person-centred counselling (one RCT), generic group psychotherapy (two RCTs), and some multicomponent interventions (two RCTs). The strongest evidence supported the use of short-term group therapy after diagnosis and an intensive, multi-faceted intervention for nursing home residents.

Reminiscence Therapy (1 review)

One review (Huang 2015) of eight RCTs assessed cognitive function in elderly patients with dementia. The meta-analysis found that reminiscence therapy is effective in improving cognition function compared with controls (e.g. social support and contact, usual care, no treatment). However, no significant effect was observed six to ten months after completion of the treatment.

Support Groups (1 review)

A review of two relevant RCTs (Leung 2015) found some evidence for the effectiveness of social support group programmes, either alone or combined with physical exercise and cognitive behavioural therapy, in improving the quality of life of patients with early-stage dementia compared with treatment as usual or educational programmes.

Multiple types of interventions (2 reviews)

Two reviews of 15 and 13 RCTs were identified exploring multiple interventions in people with dementia or Alzheimer's disease. Bunn 2016 found no clear evidence to suggest that education/training, behavioural therapy, or exercise were beneficial in improving cognitive function, functional ability, or quality of life compared with controls. Cabrera 2015 found no consistent effects on cognition, functional ability or quality of life/wellbeing of the intervention (psychosocial and educational, physical activity, sensorial therapy, complex combinatorial interventions). Significant improvements in cognitive functioning (three RCTs) and functional ability (one RCT) were only observed for single studies of interventions; results were inconsistent for quality of life/wellbeing (three RCTs).

Other interventions (7 reviews)

Forbes 2009 concluded that there was insufficient evidence to assess the effectiveness of light therapy in patients with dementia, based on three small RCTs of variable quality.

Fritz 2015 concluded from one small RCT in adults with dementia that motor-cognitive dual-task training has the potential to improve gait, balance and co-ordination in individuals with neurologic disorders.

Forrester 2014 reported low-grade evidence from two RCTs, and found no significant difference in activities of daily living or quality of life in patients with dementia receiving aromatherapy compared with placebo or active medication.

Han 2016, with three relevant RCTs, reported that individualised leisure and social activities can benefit people with dementia, by improved quality of life, but reported no data.

Hsu 2015 found a significant positive effect of non-invasive brain stimulation compared with sham stimulation on cognitive function in patients with AD, based on 11 RCTs (mean effect size 1.35, 95% CI: 0.86-1.84, $p<0.001$).

Lee 2009 reviewed three poor quality RCTs and concluded that the effectiveness of acupuncture in patients with AD had not been demonstrated. The meta-analysis suggested acupuncture had no significant effect on cognitive function (two RCTs), whereas drug therapy had significant effects on activities of daily living (2 RCTs; $p<0.001$).

Ueda 2013 included both randomised and non-randomised trials of music therapy for patients with dementia; six relevant RCTs were identified. Across all study designs, music therapy was found to have no effect on cognition or activities of daily living.

Recent RCTs

An EndNote library of potential trials (provided by NICE) was rapidly assessed by a single reviewer in order to identity RCTs assessing the interventions evaluated by the included reviews, published after the searches for the relevant reviews were conducted.

204 unique RCTs were identified and are listed in Appendix E by intervention.

4. CONCLUSIONS

Evidence from three reviews (with some degree of overlap in study coverage) suggests that cognitive stimulation improves cognitive function, but there is no strong evidence for other cognitive approaches or the other interventions assessed, although evidence does suggest that physical activity may have positive effects in patients with dementia.

Contrary to expectations we found no systematic reviews focusing on assistive technologies or physiotherapy. Assistive technology is a relatively modern field and, within the time elapsed to the dates of the literature search, there may not have been sufficient trials generated to warrant any systematic reviews. None of the reviews on exercise explicitly stated physiotherapy or physiotherapist-led interventions amongst their interventions of interest. One review included physiotherapy as a component of complex interdisciplinary interventions involving different health and social professionals.

The interventions included in this overview were evaluated in small numbers of RCTs, often with small sample sizes and inadequate methodological quality, the assessment of which was often hindered by inconsistent and poor reporting in the original studies. Within each category of intervention considered in this review, studies assessed a diverse range of interventions, with limited numbers of large RCTs examining each type. Meta-analysis was often precluded by the lack of relevant RCTs and heterogeneity in study designs/methods, populations, interventions, controls and outcome measures. There is a need for more, large, high-quality RCTs.

Overall, the research evidence is reasonable for cognitive stimulation approaches but weak for other interventions.

Section 1: Introduction

1.1 BACKGROUND

The National Institute for Health and Care Excellence (NICE) are updating their 2006 guideline (CG42) on dementia [1, 2]. NICE contracted York Health Economics Consortium (YHEC) to provide a rapid overview of recent systematic reviews to inform the update.

1.2 OBJECTIVES

The objectives of this overview were to:

- Identify recent systematic reviews which have evaluated non-pharmacological interventions to improve the cognitive functioning, functional ability and/or wellbeing of people living with dementia;
- Summarise the interventions, outcomes and conclusions from those systematic reviews;
- Provide a quality assessment of each review using a cut-down AMSTAR checklist;
- Present a brief overview of the summarised data, the limitations and evidence gaps from the reviews identified, and a description of the limitations of this overview;
- Provide a list of any recent randomised controlled trials (RCTs) that have been published relevant to the reviews included in this overview (see Appendix E).

Section 2: Methods

This overview of systematic reviews was undertaken, as far as possible, according to the principles of systematic reviewing embodied in the Cochrane handbook and guidance published by the Centre for Reviews and Dissemination (CRD) [3, 4].

The eligibility criteria for the overview are described below and summarised in Table 2.1.

2.1 ELIGIBILITY CRITERIA

2.1.1 Population

The eligible population was adults (aged 40 years and over) living with dementia in any setting (home, hospital or residential care).

Dementia was defined as any progressive or permanent cognitive decline that has not been caused by an inappropriate intervention (i.e. caused by human factors). Eligible conditions associated with cognitive decline included:

- Pseudodementia;
- Huntington's disease/Huntington's chorea;
- Creutzfeldt-Jacob disease (CJD);
- Spongiform encephalopathy;
- Corticostriatospinal degeneration;
- Spastic pseudosclerosis;
- Alzheimer's disease;
- Cortical sclerosis or cortical atrophy;
- Multiple sclerosis;
- Motor neurone disease;
- HIV or AIDS-related encephalopathy or cognitive impairment;
- Primary or progressive aphasia;
- Binswanger encephalopathy;
- Subcortical or arteriosclerotic encephalopathy;
- Kosaka-Shibayama disease;
- Neurofibrillary tangle;
- Frontotemporal or corticobasal or frontal lobe degeneration or dysfunction (FTLD, FTLDS, FTD, FTDS);
- Pick complex (or Pick's disease or syndrome);
- Wilhelmsen-Lynch disease;
- Disinhibition-dementia-parkinsonism-amyotrophy complex (DDPAC);
- Lobe/lobal atrophy;

- Temporal lobectomy or temporal lobe dysfunction;
- Kluver-Bucy syndrome or Kluever-Bucy syndrome;
- Lewy body/bodies dementia (DLB, LBD, DLBD);
- Senile confusion or senile psychosis;
- Tauopathies/taupathy.

Conditions that cause short-term cognitive decline (for example, delirium) were not eligible. Studies of people with amnestic mild cognitive impairment (MCI) were also excluded from the review, as were studies of people with non-specific MCI if their Mini Mental State Examination (MMSE) score was greater than 20.

Interventions aimed at carers of patients with dementia were not eligible, even if outcomes for people with dementia were reported.

Non-pharmacological interventions to address illness-emergent non-cognitive symptoms of dementia were not eligible for inclusion. These symptoms included:

- Anxiety;
- Depression;
- Sleep problems;
- Agitation and aggression;
- Personality changes (e.g. apathy, disinhibition);
- Wandering and pacing;
- Psychosis (delusions, hallucinations).

2.1.2 Intervention

Systematic reviews that evaluated non-pharmacological interventions which may have a positive impact on cognitive functioning, functional ability and/or wellbeing were eligible for inclusion. These interventions included, but were not limited to:

- Multisensory (music, aromatherapy, massage, light, environment);
- Occupational therapy;
- Psychoeducation;
- Psychotherapy (e.g. cognitive behavioural therapy (CBT));
- Behavioural therapy;
- Exercise;
- Cognitive rehabilitation;
- Cognitive stimulation therapy (CST);
- Animal-assisted therapy;
- Reminiscence therapy;
- Support groups;
- Assistive technology;
- Multicomponent interventions;
- Nutritional supplements (including vitamins, gingko biloba).

2.1.3 Comparators

Eligible comparators were:

- Head-to-head comparisons of interventions;
- Standard care.

2.1.4 Outcomes

Systematic reviews were included if they assessed one or more of the following outcomes:

- Cognitive functioning;
- Functional ability;
- Wellbeing, interpreted as “Quality of life”.

2.1.5 Study Design

Systematic reviews were eligible for inclusion in this overview. Systematic reviews were defined as reviews which had the following characteristics:

- A stated and clear research question;
- A statement of the eligibility criteria which have guided the selection of studies for the systematic review, including a statement about eligible study designs;
- Indications of an extensive search for relevant studies, i.e. searches beyond MEDLINE. Searches beyond MEDLINE may include searches of additional databases, reference checking, web searches, and handsearching;
- A description of study selection methods;
- A synthesis of the included studies, either narrative or statistical;
- A list or table of included studies.

Individual studies (unless they were the only study identified within a systematic review), non-systematic review articles and opinion articles were not eligible for inclusion.

Randomised controlled trials (RCTs) involving eligible interventions published after any eligible reviews are listed in Appendix E.

Reviews that did not meet the systematic review criteria are listed in Appendix D.

Where there were multiple systematic reviews for one topic, we selected the most recent reviews where all relevant RCTs from earlier reviews had been included. Those systematic reviews which only included subsets of studies already included in more recent reviews were not data extracted and are listed in Appendix C.

2.1.6 Limits

Only reviews reported in English and published since March 2006 were eligible.

Systematic reviews that contain only studies published prior to 2006 have been excluded, as those studies were likely to have been identified in the 2006 guideline.

Table 2.1: Summary of eligibility criteria

	Inclusion criteria
Population	• People (aged 40 years and over) living with dementia (variously defined)
Intervention	Non-pharmacological interventions which may have a positive impact on cognitive functioning, functional ability and/or wellbeing: • Multisensory (music, aromatherapy, massage, light, environment) • Occupational therapy • Psychoeducation • Psychotherapy (e.g. CBT) • Behavioural therapy • Exercise • Cognitive rehabilitation • Cognitive stimulation therapy • Animal-assisted therapy • Reminiscence therapy • Support groups • Assistive technology • Multicomponent interventions • Nutritional supplements
Comparators	• Head-to-head studies of interventions • Standard care
Outcomes	• Cognitive functioning • Functional ability • Wellbeing/quality of life
Study design	• Systematic reviews • *Randomised controlled trials published since the eligible systematic reviews had been undertaken*
Limits	English language reviews published in 2006 and later

2.2 SEARCHES

The literature search was conducted by NICE and the results were provided to YHEC as two Endnote libraries: one library of systematic reviews and one library of RCTs.

2.3 RECORD SELECTION

2.3.1 Systematic Reviews

The records in the EndNote library of systematic reviews were rapidly assessed according to their relevance in providing information on eligible interventions. Obviously irrelevant records, such as animal studies, commentaries and records on issues unrelated to the topic of interest, were removed. The initial record selection, based on the screening of title and abstracts, was undertaken by one reviewer using the systematic review software Covidence [5]. As part of the quality assurance process, 10% of the records that were rejected (307/3017 records) were checked by a second reviewer. The rejected records were sorted into date order and then author order and every tenth record was rechecked. 2/307 (0.65%) of the rejected records sampled were deemed possibly eligible by the second checker (JMG). A 0.65% missed record rate based on title and abstract assessment did not seem unreasonable.

Where there was uncertainty about the eligibility of an individual record it was selected for more detailed consideration based on the full text. The full texts of all potentially relevant studies were obtained.

A full assessment of each full text document was made by one reviewer. As part of the quality assurance process, 10% of records rejected based on the full text were checked by a second reviewer (JMG). 30/297 excluded records were reviewed by JMG. The 30 records were chosen randomly using a random number generator (https://www.random.org/). One of the 30 records required a different exclusion reason, and two other records were discussed again but the exclusion reason was not changed.

The number of systematic reviews identified by the search and excluded at various stages is reported in a study flow diagram (see Figure 3.1).

Decisions on the relevance for each review assessed are saved in Covidence. Disagreements were resolved by consulting a third independent reviewer. Studies excluded based on an assessment of the full text document are listed in the excluded studies table in Appendix D, with reasons for exclusion.

2.3.2 RCTs

The EndNote library of potential trials provided to YHEC by NICE was rapidly assessed by a single reviewer in order to identity RCTs assessing the interventions evaluated by the included reviews, published after the searches for the relevant review were conducted. For example, the searches for the included systematic review on ginkgo biloba (Yang 2016) [6] were conducted in December 2014, and therefore potentially relevant trials of this intervention were selected if they were published in or after 2014. Any trials published in the same year as the searches took place were cross referenced against the included review in order to prevent duplication.

Records of potentially eligible interventions were identified by searching for terms to describe the interventions in the database records, using EndNote's search functionality. The EndNote records were also searched using terms to describe RCTs (random, blinded, placebo etc.) in order to identify any trials that could not be retrieved using terms for the intervention. It should be noted that due to the complexity of many of the included interventions, and the variability in the ways they may be described in the database records, the limited search functionality available in EndNote may have resulted in some eligible trials being missed. Furthermore, as selection of RCTs was based on assessment of the title and abstract fields of the database records only, it is likely that full text assessment would have resulted in some of the included trials becoming ineligible.

Trials were grouped by individual review, with the exception of those related to the reviews in the categories "Cognitive rehabilitation, training and/or stimulation" and "Exercise". The overlap between the interventions assessed by the individual reviews included in these categories made it difficult to divide trials by specific reviews they relate to. Trials of these interventions therefore form one single group. Selection was date limited by the publication date of the earliest review and selected trials cross referenced against all the included reviews in this category to prevent duplication.

Details of the selected RCTs can be found in Appendix E.

2.4 DATA EXTRACTION

High level data were extracted from the selected systematic reviews. The participants, interventions and key messages of the reviews are summarised, as well as the limitations of the reviews and the gaps in the evidence, as described by the review authors.

One reviewer extracted review data. Quality assurance involved the data extraction of 10% of reviews which were checked by a second reviewer (JP/MC). Rows in the data extraction spreadsheet, each corresponding to a specific review, were selected using random numbers generated by random.org. To assess both relegation and data extraction, 11/106 records selected for review were assessed, regardless of whether they had been fully extracted or not. Of the seven records that were not extracted in full, the decision remained unchanged for six records, but was changed to exclude (on basis of ineligible population) for the seventh. Three of the remaining four records required some minor revision (addition of further detail or a few non-significant results) to their data extractions, whilst the data extraction of the fourth was unchanged.

Where a review contained an eligible subset population the data for the relevant subset only are reported, where provided.

The review data were extracted into Excel:

- Review identification data (author and year);
- Review objectives;
- Number of RCTs identified;

- Number of RCTs identified in relevant populations and relevant outcomes (any year)
- Quality assessment tool for RCTs;
- Quality of relevant RCTs;
- Population in RCTs;
- Intervention (main category and description);
- Comparator;
- Key results;
    - Cognitive functioning;
    - Functional ability;
    - Wellbeing/quality of life;
- Authors' conclusions of the review;
- Limitations of the review (as described by review author);
- Risk of bias of the review (modified AMSTAR checklist).

2.5 RISK OF BIAS ASSESSMENT

One reviewer assessed the risk of bias of each review.

As part of the quality assurance process, a second reviewer checked 10% of the assessments (JP/MC). Risk of bias was assessed as part of the quality assurance process of the data extraction. Hence, 4/33 fully extracted records were assessed. The risk of bias assessments were correct for two of the four reviews assessed. In one review, the grades achieved for two of the quality criteria were changed to 'Yes' (a priori study design) and 'Not clear' (list of included and excluded studies) following discussion. A further review required the addition of some clarifying detail but the grades were unchanged.

The quality of eligible systematic reviews was assessed using a modified version (Table 2.2) of the AMSTAR checklist [7] to reflect the issues of interest to NICE. The checklist criteria were applied to each overall review. For reviews that contained subsections relating to eligible populations, the risk of bias was assessed for the overall review since the literature searches and eligibility criteria described were not specific to the subset of the review that was relevant to the population of interest.

The results of the risk of bias assessment are summarised in Table 3.2. The detailed assessments are provided in Appendix A.

Table 2.2: Summary of quality assessment of systematic reviews using modified AMSTAR

AMSTAR question	How is the question addressed in the review?	Grade (yes/no/not clear/N/A)	Overall grade
Was an 'a priori' design provided? *A priori design will be noted when the research question and inclusion criteria were established before the conduct of the review.*			
Was a comprehensive literature search performed? *A comprehensive literature search will be adequate if at least two electronic sources were searched and the review must provide the years and databases used (e.g. Central, EMBASE, and MEDLINE). The key words and/or MESH terms used in the strategies must be stated and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.*			
Was a list of studies (included and excluded) provided?			
Were the characteristics of the included studies provided? *In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analyzed e.g. age, ethnicity, gender, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.*			

The overall grade was determined as follows:

- 4 "yes" votes in AMSTAR = high;
- 1-2 "no" votes = moderate;
- 3-4 "no" votes = poor.

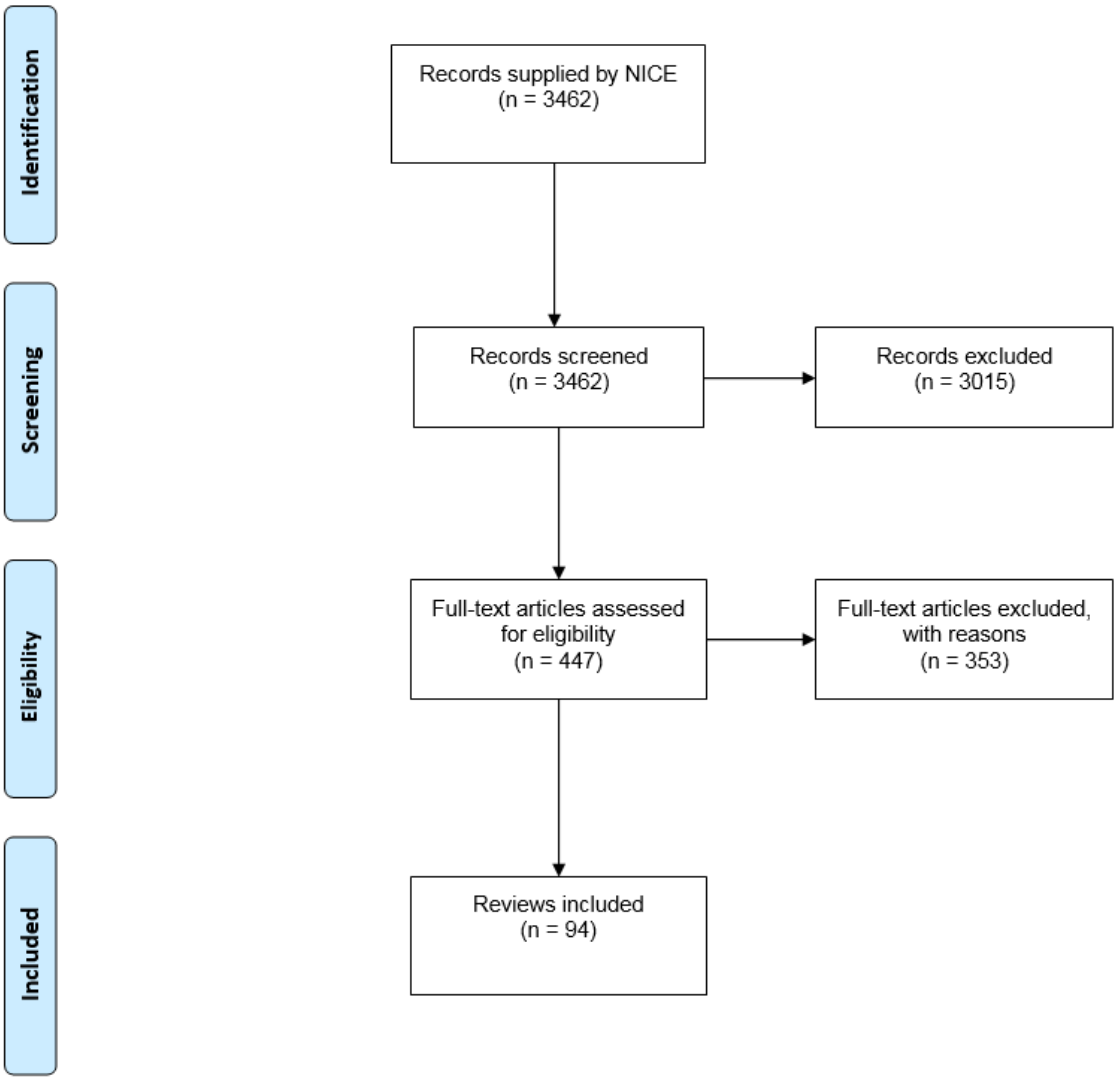
Section 3: Results

3.1 SEARCH RESULTS

NICE provided 3462 records of potential systematic reviews in one EndNote library, and 8017 records of potential RCTs in a second EndNote library.

3015 records were excluded from the systematic review collection based on title and abstract information, and 447 records were assessed based on the full text. 94 systematic reviews were subsequently included in the overview, and 353 were excluded. Excluded records are listed in Appendix D, with reasons for exclusion.

Figure 3.1: Flow diagram of record selection process for systematic reviews



3.2 CATEGORISATION OF THE ELIGIBLE REVIEWS

Of the 94 eligible systematic reviews, 33 were data extracted and the remainder were categorised as follows:

- Three reviews [8-10] were associated with a review that had been data extracted (see Appendix C, Table C.1)
- 27 reviews were assessed as not needed (e.g. older reviews including fewer studies than the one extracted for that topic area). These records can be found in Appendix C, Table C.2. The topic areas covered by these reviews were:
    - Nutritional supplements (including vitamins, gingko biloba) (16 reviews) [11-26];
    - Occupational therapy (one review) [27];
    - Reminiscence therapy (one review) [28];
    - Other intervention (nine reviews) [29-37];
- 31 reviews were not extracted for other reasons (reasons can be found in Appendix C, Table C.3).

3.3 CHARACTERISTICS OF THE INCLUDED REVIEWS: PARTICIPANTS

Table 3.1 describes the populations included in each review.

Table 3.1: Populations of the RCTs in the eligible systematic reviews

Systematic review reference	Populations of RCTs within the systematic reviews
Abdelhamid A, Bunn D, Copley M, Cowap V, Dickinson A, Gray L, et al. Effectiveness of interventions to directly support food and drink intake in people with dementia: systematic review and meta-analysis. BMC Geriatrics. 2016;16:26.	The review searched for RCTs including 3 or more adults diagnosed with any type/stage of dementia or MCI or where the mean MMSE score plus one standard deviation was ≤26, in any setting. Twenty eight interventions stated that participants were diagnosed with dementia, three with MCI, and in 12 cognitive impairment was assumed from cognitive scores or setting. The relevant population ultimately included in the review had mild-severe AD, or mixed type, or not reported.
Bahar-Fuchs A, Clare L, Woods B. Cognitive training and cognitive rehabilitation for mild to moderate Alzheimer's disease and vascular dementia. Cochrane Database Syst Rev. 2013(6):CD003260	Medical diagnosis of dementia, including AD, vascular dementia or mixed AD and vascular dementia. Dementia types noted were dementia, probable AD, and mixed AD/vascular dementia.
Brett L, Traynor V, Stapley P. Effects of physical exercise on health and wellbeing of individuals living with a dementia in nursing homes: a systematic review. J Am Med Dir Assoc. 2016;17(2):104-16.	Diagnosed with dementia; in a nursing home.
Bunn DK, Abdelhamid A, Copley M, Cowap V, Dickinson A, Howe A, et al. Effectiveness of interventions to indirectly support food and drink intake in people with dementia: Eating and Drinking Well IN dementiA (EDWINA) systematic review. BMC Geriatrics. 2016;16:89.	Adults with any type/stage of dementia or MCI, or MMSE score +1 std deviation ≤26. Dementia types noted were AD, AD plus other, and various/mixed.
Burckhardt M, Herke M, Wustmann T, Watzke S, Langer G, Fink A. Omega-3 fatty acids for the treatment of dementia. Cochrane Database Syst Rev. 2016;4:CD009002.	AD.
Cabrera E, Sutcliffe C, Verbeek H, Saks K, Soto-Martin M, Meyer G, et al. Non-pharmacological interventions as a best practice strategy in people with dementia living in nursing homes. A systematic review. Eur Geriatr Med. 2015;6(2):134-50.	Dementia; living in nursing homes. Dementia types noted were dementia of varying severity or MMSE score, unspecified, AD or vascular dementia. Some studies targeted staff/caregivers.
Carrion C, Aymerich M, Bailles E, Lopez-Bermejo A. Cognitive psychosocial intervention in dementia: a systematic review. Dement Geriatr Cogn Disord. 2013;36(5-6):363-75.	Older people with dementia, specifically diagnosed as having AD or probable AD. Dementia severity ranged from mild to severe.
Cheston R, Ivanecka A. Individual and group psychotherapy with people diagnosed with dementia: A systematic review of the literature. Int J Geriatr Psychiatry.2017 Jan 7;32(1):3-31. Epub 2016 Jul 7.	The review searched for studies involving people with Alzheimer's disease, vascular dementia, Lewy-body dementia or a mixed condition were included; studies which focussed exclusively on people with mild cognitive impairment or people with rarer forms of dementia (i.e. frontal–temporal dementia, Human Immunodeficiency Virus, Creutzfeldt–Jakob Disease, Huntington's Disease, Parkinson's Disease and Down's Syndrome) were excluded. The relevant identified studies had populations with mild to moderate dementia/AD; Lewy body dementia, vascular, frontal lobe, or mixed dementia.

Systematic review reference	Populations of RCTs within the systematic reviews
Farina N, Isaac M, Clark AR, Rusted J, Tabet N. Vitamin E for Alzheimer's dementia and mild cognitive impairment. Cochrane Database Syst Rev. 2012(11):CD002854	Diagnosed with probable AD according to internationally accepted diagnostic criteria including NINCDS-ADRDA, DSM-IV and ICD-10.
Forbes D, Forbes S, Morgan DG, Markle-Reid M, Wood J, Culum I, et al. Exercise programs for people with dementia. Cochrane Database Syst Rev. 2015(4):CD006489	Majority of participants aged over 65 years with a diagnosis of dementia. Dementia types noted were dementia (varying severity or unspecified), AD and mixed AD/vascular dementia.
Forbes D, Culum I, Lischka AR, Morgan DG, Peacock S, Forbes J, et al. Light therapy for managing cognitive, sleep, functional, behavioural, or psychiatric disturbances in dementia. Cochrane Database Syst Rev. 2009(4):CD003946.	To be eligible for the review, the participants in a study must have a diagnosis of dementia (Alzheimer's disease, Dementia with Lewy Bodies, Vascular Dementia, or dementia due to another cause) according to accepted criteria such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R, DSM-IV), the National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA), or ICD-10. Severity of dementia should be assessed by the use of standardized instruments such as the Mini-Mental State Examination. Assessment of dementia in the relevant included reviews was as follows: In one study, the participants met the DSM-IV or NINCDS-ADRDA criteria for Alzheimer's disease, Vascular Dementia (VD) or dementia. In a second study, the participants were included only if their Mini-Mental State Examination (MMSE) score was no more than 23. In the three studies, the mean MMSE scores were 13.92 (SD5.37), 14.4 (SD 6.6) and 15.9 (SD 5.90), respectively.
Forrester LT, Maayan N, Orrell M, Spector AE, Buchan LD, Soares-Weiser K. Aromatherapy for dementia. Cochrane Database Syst Rev. 2014(2):CD003150	Patients eligible for the review included those with a diagnosis of dementia of any type and severity, based on diagnostic criteria such as the ICD-10 and DSM-IV, or well validated assessment scales for cognitive function, such as the MMSE and the ADAS-Cog. Of the included studies, one study involved people with severe dementia, diagnosed with the Clinical Dementia Rating scale, and clinically significant agitation. The other study involved participants with a National Institute of Neurological and Communicative Disorders and Stroke and Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA) diagnosis of probable or possible Alzheimer's disease and agitation.
Fritz NE, Cheek FM, Nichols-Larsen DS. Motor-Cognitive Dual-Task Training in Persons With Neurologic Disorders: A Systematic Review. JNPT. 2015;39(3):142-53.	Adults (>18 years old) with a central neurologic disorder diagnosis were eligible for the review. Patients in the included studies were elderly adults with dementia.
Groot C, Hooghiemstra AM, Raijmakers PG, van Berckel BN, Scheltens P, Scherder EJ, et al. The effect of physical activity on cognitive function in patients with dementia: A meta-analysis of randomized control trials. Ageing Res Rev. 2016;25:13-23.	Diagnosed with any type of dementia, except those presenting with prominent motor features (e.g. Parkinson's disease dementia or Huntington's disease). Dementia types noted were dementia (undefined), AD, and mixed populations comprised variously of AD, vascular dementia, multiple infarct dementia, mixed dementia and undefined dementia.

Systematic review reference	Populations of RCTs within the systematic reviews
Han A, Radel J, McDowd JM, Sabata D. the benefits of individualised leisure and social activity interventions for people with dementia: a systematic review. Act Adapt Aging. 2016;40(3):219-65.	Eligible populations were those with any types and stages of dementia. The identified RCTs included patients with moderate to severe dementia.
Hsu WY, Ku Y, Zanto TP, Gazzaley A. Effects of noninvasive brain stimulation on cognitive function in healthy aging and Alzheimer's disease: a systematic review and meta-analysis. Neurobiol Aging. 2015;36(8):2348-59.	The review searched for populations of healthy older adults or patients diagnosed with AD. The populations found had a mean MMSE varying from around 13 to around 23.
Huang H-C, Chen Y-T, Chen P-Y, Huey-Lan Hu S, Liu F, Kuo Y-L, et al. Reminiscence therapy improves cognitive functions and reduces depressive symptoms in elderly people with dementia: a meta-analysis of randomized controlled trials. J Am Med Dir Assoc. 2015;16(12):1087-94.	Eligible patients were elderly people with dementia. The identified RCTs included patients with AD, vascular dementia or mixed.
Huntley JD, Gould RL, Liu K, Smith M, Howard RJ. Do cognitive interventions improve general cognition in dementia? A meta-analysis and meta-regression. BMJ Open. 2015;5(4):e005247.	Diagnosis of dementia; mean age >60 years. Dementia types were unspecified, AD or mixed AD and vascular dementia.
Kiepe MS, Stockigt B, Keil T. Effects of dance therapy and ballroom dances on physical and mental illnesses: a systematic review. Arts in Psychotherapy. 2012; 39(5): 404-11.	Various physical/mental illnesses, including dementia and Parkinson's disease.
Lee MS, Yang EJ, Kim JI, Ernst E. Ginseng for cognitive function in Alzheimer's disease: a systematic review. J Alzheimers Dis. 2009;18(2):339-44.	AD; all had been diagnosed according to NINDS-ADRDA criteria.
Lee MS, Shin B, Ernst E. Acupuncture for Alzheimer's disease: a systematic review. Int J Clin Pract. 2009;63(6):874-79.	Eligible population was human patients with AD; no further details of population were given in the included RCTs.
Leung P, Orrell M, Orgeta V. Social support group interventions in people with dementia and mild cognitive impairment: a systematic review of the literature. Int J Geriatr Psychiatry. 2015;30(1):1-9.	The review searched for populations of older adults diagnosed with dementia, AD according to DSM-IV, ICD-10 or comparable, and participants with a diagnosis of MCI. Any definition of MCI was acceptable as long as the criteria used were published and included evidence of objective cognitive impairment but no dementia (Petersen et al., 1999; Petersen, 2003). Any setting (e.g. home, community and institution) was eligible. Of the relevant studies identified, in one study, all participants were diagnosed with dementia, with a score of <2.0 on the Clinical Dementia Rating Scale, indicative of mild dementia. The mean Mini-mental state examination (MMSE) was 24.8 and 22.9 for the intervention and the control group, respectively. In the other study, the diagnosis of dementia was verified by the individual's care physician. The mean MMSE scores at baseline was 23.4, whereas 86% of the sample had a Clinical Dementia Rating Scale score of 0.5, consistent with early-stage dementia.
Li MM, Yu JT, Wang HF, Jiang T, Wang J, Meng XF, et al. Efficacy of vitamins B supplementation on mild cognitive impairment and	Eligible patient population for the review included patients who were diagnosed with MCI by the Operationalisation of Petersen criteria (memory complaints, objective

Systematic review reference	Populations of RCTs within the systematic reviews
Alzheimer's disease: a systematic review and meta-analysis. Curr Alzheimer Res. 2014;11(9):844-52.	memory impairment, normal general cognitive function, intact daily functioning and absence of dementia) and other measures [e.g., Mini Mental State Examination (MMSE) and Cambridge Mental Disorders of the Elderly Examination (CAMDEX); or a diagnosis of probable or possible AD consistent with the Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV) and the criteria of the National Institute of Neurological and Communicative Disorders and Stroke/Alzheimer's Disease and Related Disorders Association criteria (NINCDS-ADRDA). The population found had mild to moderate AD with an MMSE score of 14 to 24.
Mestre T, Ferreira J, Coelho MM, Rosa M, Sampaio C. Therapeutic interventions for disease progression in Huntington's disease. Cochrane Database Syst Rev. 2009:CD006455	The review searched for populations with a genetically confirmed diagnosis of Huntington's disease (HD) or compatible symptoms and a family history. Populations of the included RCTs including Vitamin E were as follows: Study one: TFC-UHDRS ≥7, disease stage I or II. Study two: mild to moderate Huntington's disease (mild to moderate dementia, MMSE>15, ambulatory care). Study three: functional stages I-III.
Miroddi M, Navarra M, Quattropani MC, Calapai F, Gangemi S, Calapai G. Systematic review of clinical trials assessing pharmacological properties of Salvia species on memory, cognitive impairment and Alzheimer's disease. CNS Neurosci Ther. 2014;20(6):485-95.	The review searched for use of the intervention in populations of healthy subjects, or as a treatment of cognitive decline linked to Alzheimer's disease or other neurodegenerative illnesses. The relevant population found had mild-to-moderate dementia according to the criteria of the cognitive subscale of ADAS-cog and CDR, or probable AD according to the criteria of NINCDS⁄ADRDA.
Ojagbemi A, Owolabi M. Do occupational therapy interventions improve quality of life in persons with dementia? A meta-analysis with implications for future directions. Psychogeriatrics. 2016;Jun 24:Epub.	The review searched for populations with dementia. Included RCTs used a diagnosis of dementia according to the DSM, in four studies, and the ICD-10 in one study. The other studies either relied on 'clinician best judgment' of dementia or a MMSE score <24. Mostly mild to moderate dementia.
Onakpoya IJ, Heneghan CJ. The efficacy of supplementation with the novel medical food, Souvenaid, in patients with Alzheimer's disease: A systematic review and meta-analysis of randomized clinical trials. Nutr Neurosci. 2015:1-9.	The review searched for patients with mild, moderate, or severe AD. Two RCTs included participants with mild AD; one study of participants with mild-to-moderate AD.
Spector A, Orrell M, Hall L. Systematic Review of Neuropsychological Outcomes in Dementia from Cognition-Based Psychological Interventions. Dement Geriatr Cogn Disord. 2012;34(3/4):244-55.	Diagnosis of dementia, or mild-to-moderate dementia (as estimated by standardised measures). Dementia types noted were dementia, probable/possible AD, AD, AD/mixed dementia; probable AD/vascular dementia/Parkinson's dementia, MCI/mild AD.
Ueda T, Suzukamo Y, Sato M, Izumi S. Effects of music therapy on behavioral and psychological symptoms of dementia: a systematic review and meta-analysis. Ageing Res Rev. 2013;12(2):628-41.	Eligible patients were older individuals who were formally diagnosed with any type of dementia occurring with Parkinson's Disease or Alzheimer's Disease, vascular dementia, frontotemporal dementia, or other types included in the Diagnostic and Statistical Manual of Mental Disorders-IV, the International Classification of Diseases-10, or other accepted diagnostic criteria. The populations found had: mild

Systematic review reference	Populations of RCTs within the systematic reviews
	to moderate senile dementia of Alzheimer's type; vascular dementia; frontotemporal dementia; dementia with Lewy bodies; mixed or other type of dementia.
Wayne PM, Walsh JN, Taylor-Piliae RE, Wells RE, Papp KV, Donovan NJ, et al. Effect of Tai Chi on cognitive performance in older adults: Systematic review and meta-analysis. J Am Geriatr Soc. 2014;62(1):25-39.	Adults with/without cognitive decline. Participants with cognitive decline (7 RCTs) had MCI, amnestic MCI and dementia.
Woods B, Aguirre E, Spector AE, Orrell M. Cognitive stimulation to improve cognitive functioning in people with dementia. Cochrane Database Syst Rev. 2012(2): CD005562.	Diagnosis of dementia, the main categories being Alzheimer's disease (AD), vascular dementia or mixed AD and vascular dementia. Patients with varying cognitive impairment were also noted in the included studies, e.g. amnestic MCI, probable AD, moderate to severe impairment, cognitive disturbances.
Yang G, Wang Y, Sun J, Zhang K, Liu J. Ginkgo Biloba for mild cognitive impairment and Alzheimer's disease: a systematic review and meta-analysis of randomized controlled trials. Curr Top Med Chem. 2016;16(5):520-8.	The review included patients diagnosed with any one of the following criteria as AD, regardless of severity and disease course: (a) DSM III, III-R; (b) ICD (9th or 10th edition); (c) NINCDS/ADRDA. Participants diagnosed with any one of the following criteria as MCI were also included: (a) The DSM III, III-R or IV; (b) ICD version 9 or 10; (c) Petersen criteria; (d) European Consortium on Alzheimer's disease. The key differences of diagnostic criteria between AD and MCI were as follows: (1) AD can be diagnosed only if at least two domains (including memory) demonstrating cognitive impairment, while MCI can be diagnosed if there is impairment in memory; (2) AD can be diagnosed only if cognitive impairment is so severe that the ability to perform activities of daily livings is interfered, while for MCI, there is just a slight cognitive decline and functional disturbance. The relevant population found were described as having AD, with no further details given.
Yang G, Wang Y, Tian J, Liu JP. Huperzine A for Alzheimer's disease: a systematic review and meta-analysis of randomized clinical trials. PLOS ONE. 2013;8(9):e74916.	The review searched for patients with AD regardless of the disease course and severity and diagnosed with any one of the following criteria: a) The ICD version 9 or 10; b) The DSM III, III-R or IV; c) NINCDS/ADRDA. The relevant population found were participants with Alzheimer's disease, aged between 50 to 85 years old.

AD - Alzheimer's disease; ADAS-Cog - Alzheimer's Disease Assessment Scale-cognitive subscale; CDR - Clinical Dementia Rating Scale; DSM - Diagnostic and Statistical Manual of Mental Disorders; DSM-IV - Diagnostic and Statistical Manual of Mental Disorders fourth Edition; DSM-III - Diagnostic and Statistical Manual of Mental Disorders third Edition; ICD-10 - International Classification of Diseases-10; ICD - International Classification of Disease; MMSE-Mini mental state examination; MCI - Mild cognitive impairment; NINCDS-ADRDA - National Institute of Neurological and Communicative Disorders and Stroke-Alzheimer's Disease and Related Disorders Association; RCT – Randomised controlled trial; TFC-UHDRS -Total Functioning Capacity-Unified Huntington Disease Revised Scale

3.4 CHARACTERISTICS OF THE INCLUDED REVIEWS: INTERVENTIONS

Full details of the interventions assessed by each of the reviews can be found in Appendix B.

Where a subset of a review population matched the eligible population, data from the relevant subset only are reported.

3.4.1 Nutritional supplements (10 reviews data extracted)

One review (Abdelhamid 2016) [38] assessed the effectiveness of interventions to directly improve, maintain or facilitate oral food and drink intake, nutrition and hydration status, in people with cognitive impairment or dementia (across all settings, levels of care and support, types and degrees of dementia). The review searched for RCTs including 3 or more adults diagnosed with any type/stage of dementia or MCI or where the mean MMSE score plus one standard deviation was ≤26, in any setting. Twenty eight interventions stated that participants were diagnosed with dementia, three with MCI, and in 12 cognitive impairment was assumed from cognitive scores or setting. The relevant population ultimately included in the review had mild-severe AD, or mixed type, or not reported. It included 21 RCTs. No studies were at low risk of bias overall. The interventions aimed to modify food and/or drink, provide food- or drink-based supplements, assist with eating or drinking, or manage swallowing problems (pharmacological and pill-based supplements were excluded). The review found no clear effects on cognition, functional ability or quality of life.

One review (Yang 2016) [6] examined any forms of ginkgo biloba compared with placebo or conventional medicine for people with Alzheimer's disease (AD) (see Table 3.1 for further details) and found 12 RCTs. The risk of bias was as follows: randomisation: seven low risk and five unclear risk of bias; allocation concealment: three low and nine unclear; blinding of participants and personnel: seven low risk and five unclear; incomplete outcome data: seven low risk and five unclear; selective reporting or "other" bias: all low risk. Compared with conventional medicine alone, ginkgo biloba, in combination with conventional medicine, was superior in improving Mini-Mental State Examination (MMSE) scores at 24 weeks for patients with AD (MD 2.39, 95% CI 1.28 to 3.50, p<0.0001). When compared with placebo or conventional medicine in individual trials, ginkgo biloba demonstrated similar but inconsistent findings. Compared with conventional medicine alone, ginkgo biloba in combination with conventional medicine was superior in improving Activity of Daily Living (ADL) scores at 24 weeks for AD (MD -3.72, 95% CI -5.68 to -1.76, p = 0.0002). When compared with placebo or conventional medicine in individual trials, ginkgo biloba demonstrated similar but inconsistent findings. One trial reported ginkgo biloba for AD was superior to placebo as measured by the quality of life questionnaire for persons with dementia (DEMQOL)-proxy quality of life scale. The authors concluded that ginkgo biloba is potentially beneficial for the improvement of cognitive function, activities of daily living (ADL), and global clinical assessment in patients with AD. However, due to limited number of trials addressing each outcome, the authors were unable to perform funnel plots to detect the publication bias.

One review (Burckhardt 2016) [39] assessed omega-3 polyunsaturated fatty acid (PUFA) supplementation in people with AD, reviewing three RCTs at low risk of bias. Meta-analysis showed no effect on cognition, functional ability or quality of life versus placebo.

One review (Onakpoya 2015) [40] assessed orally-administered Souvenaid (a complex of omega-3 fatty acids (eicosapentaenoic and docosahexaenoic acids)), the nucleotide uridine monophosphate, phospholipids, B complex vitamins (pyridoxine, cyanocobalamin, and folate), choline, vitamin E, and the micronutrient, selenium, in patients with mild, moderate, or severe AD and found three good quality RCTs. Two RCTs included participants with mild AD, while one included participants with mild-to-moderate AD. The intervention had no significant effect on cognition, functional ability or quality of life.

One review (Miroddi 2014) [41] assessed Salvia officinalis L. and Salvia lavandulaefolia L. (whole herbal extracts) compared with placebo in the enhancement of cognitive performance in healthy subjects, or as a treatment of cognitive decline linked to Alzheimer's disease or other neurodegenerative illnesses. They found one relevant RCT with a Jadad score of five, with a population of people with a diagnosis of mild-to-moderate dementia according to the criteria of the cognitive subscale of Alzheimer's Disease Assessment Scale (ADAS-cog) and Clinical Dementia Rating Scale (CDR), or probable AD according to the criteria of National Institute of Neurological and Communicative Disorders and Stroke and Alzheimer's Disease and Related Disorders Association (NINCDS⁄ADRDA). This RCT reported that patients who received S. officinalis experienced significant benefits in cognitive function by the end of the treatment, as indicated by improved scores in the CDR and ADAS. Functional ability and quality of life were not reported. However, the effects of Salvia species were not tested against well-established drugs, such as anticholinesterase drugs, prescribed in the treatment of cognitive impairment.

One review (Li 2014) [42] aimed to assess marketed multivitamin B supplements (vitamin B12 + vitamin B6 + folic acid) or vitamin B supplementation alone (vitamin B12, vitamin B6 or folic acid) in patients who were diagnosed with MCI by the Operationalisation of Petersen criteria (memory complaints, objective memory impairment, normal general cognitive function, intact daily functioning and absence of dementia) and other measures [e.g., Mini Mental State Examination (MMSE) and Cambridge Mental Disorders of the Elderly Examination (CAMDEX); or a diagnosis of probable or possible AD consistent with the Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV) and the criteria of the National Institute of Neurological and Communicative Disorders and Stroke/Alzheimer's Disease and Related Disorders Association criteria (NINCDS-ADRDA). The population of the three included RCTs had mild to moderate AD with an MMSE score of 14 to 24. Two out of three studies were appraised as having a low risk of bias on six of seven items and one was deemed to have an unclear risk of bias for two criteria. The review found no significant cognitive benefits or functional change compared to placebo; quality of life was not reported.

One review (Yang 2013) [43] assessed Huperzine A for treatment of AD, regardless of manufactures, preparation form, dose, and duration. It found 20 RCTs but the general methodological quality of most trials was moderate or poor. Compared with placebo, Huperzine A showed a significant beneficial effect on the improvement of cognitive function

as measured by the MMSE at eight weeks, 12 weeks and 16 weeks, and by Hastgawa Dementia Scale (HDS) and Wechsler Memory Scale (WMS) at eight weeks and 12 weeks. One trial demonstrated no significant change in cognitive function, as measured by the ADAS-Cog in the Huperzine A group. Trials comparing Huperzine A with no treatment, psychotherapy and conventional medicine demonstrated similar findings. ADL favoured Huperzine A as measured by the ADL Scale at six weeks, 12 weeks and 16 weeks. One trial demonstrated no significant change in activity of daily living as measured by Alzheimer's disease Cooperative Study Activities of Daily Living Inventory (ADCS-ADL) in the Huperzine A group. Trials comparing Huperzine A with no treatment, psychotherapy and conventional medicine demonstrated similar findings. Quality of life was not reported. The authors concluded that Huperzine A appears to have beneficial effects on improvement of cognitive function, daily living activity, and global clinical assessment in participants with AD. However, the findings should be interpreted with caution due to the poor methodological quality of the included trials. The authors also noted the limitations of the review in terms of limited methodological quality; the funnel plot analysis showed asymmetry, which suggests the possibility of publication bias; and that they might have missed some trials since they did not search relevant databases such as AMED and EMBASE.

One review (Farina 2012) [44] assessed the efficacy of vitamin E at any dose in the treatment of AD and found two RCTs, patients in both of which had probable AD according to NINCDS-ADRDA diagnostic criteria. Both studies had a low risk of selection and "other" bias. Both had unclear allocation concealment, blinding of participants and personnel, and blinding of outcome assessment. One had an unclear risk of attrition bias and the other reported very high attrition rates and did not give reasons, as such it was judged as a high risk of bias. Reporting bias was adequate in one study and unclear in the other. The review found no convincing evidence that vitamin E is of benefit in the treatment of AD. Patients whose oxidative stress markers were lowered by vitamin E (responders) showed no significant difference in cognition compared to the placebo group. Functional ability and quality of life were not reported.

An earlier review (Mestre 2009) [45] also examined vitamin E, as well as Coenzyme Q10 and creatine (among other interventions - all pharmacological and nonpharmacological interventions were included in the review), in patients with a genetically confirmed diagnosis of Huntington's disease (HD) or compatible symptoms and a family history., and found three RCTs. Two RCTs had adequate randomisation and one was quasi-randomised. One had adequate allocation concealment and two were unclear. Sample size calculation procedures were described in two trials and in one a post-hoc sample size analysis was conducted. Two trials analysed data on an intention-to-treat basis and one per protocol. None of the three assessed substances had a significant effect on cognition, functional ability or quality of life versus the comparator.

One review (Lee 2009) [46] examined the clinical evidence for low and high doses of ginseng as a treatment for AD from two RCTs. The methodological quality of the trials was poor (both had a Jadad score of one). Neither of the trials reported methods of randomisation, details of allocation concealment, or described blinding. Neither of the studies reported sufficient details of drop-outs and withdrawals. The review found a significant effect in favour of ginseng

compared with conventional therapy on the MMSE (n = 174, weight mean difference (WMD), 1.85; 95% confidence intervals, CIs 0.88 to 2.82, p = 0.0002) and on the ADAS-cog (n = 174, WMD, 3.09; 95% CIs 1.08 to 5.09, p = 0.003). Functional ability and quality of life were not reported. The authors concluded that the evidence for ginseng as a treatment for AD is scarce and inconclusive. They also noted limitations of the systematic review in terms of the paucity of data and the potential incompleteness of the evidence reviewed. The two included studies were supported by the manufacturers, which may have introduced industry bias. A further limitation is the often suboptimal methodological quality of the primary data. None of the included RCTs were successful in minimising bias. Collectively, these facts seriously limit the conclusiveness of this systematic review.

Overall, few high-quality recent RCTs have been identified for nutritional interventions, and the evidence for any of these interventions is unconvincing.

3.4.2 Cognitive rehabilitation, training and/or stimulation (5 reviews data extracted)

A Cochrane review (Bahar-Fuchs 2013) [47] assessed the effectiveness of cognitive training and rehabilitation for people with mild AD and/or vascular dementia compared with usual care, no treatment, other therapy, conventional medicine, or placebo. Eligible interventions might also be described as memory 'therapy', 'groups', 'retraining', 'support' or 'stimulation' or as cognitive ' training', 'retraining', 'remediation', 'support' or 'stimulation', and may be accompanied by psychoeducational activities and supportive discussion. The interventions were classified as training or rehabilitation according to the way they were described in relation to broad definitions. Hence there is the potential for overlap between techniques employed. Cognitive training interventions, in the form of group or individual session of guided practice on a set of standardised tasks, were designed to address cognitive functions such as attention, concentration, memory, perceptual ability and problem-solving. Cognitive rehabilitation interventions were delivered on an individual basis and focused on patient-derived personal goals, supported by components aimed at improving everyday functioning such as practical aids and strategies. The review included 12 RCTs. The 11 RCTs of cognitive training were of low to moderate quality, but the single RCT of cognitive rehabilitation was of a generally high quality. Compared with the control, there was no evidence for the efficacy of cognitive training in improving cognitive functioning or ADL; quality of life was not assessed. The single trial of cognitive rehabilitation, however, did show a potential benefit in the mean change in the patient's self-reported capacity for ADL (as measured by the Canadian Occupational Performance Measure), which was 1.22 higher (SD 0.09 to 2.35 higher) in the intervention group than in the control group (relaxation therapy and no treatment). A global measure of cognition was not reported. Six months after the intervention, patients were more satisfied with their memory performance and a trend suggested they rated their overall quality of life higher than control patients. The authors concluded that there is still no indication of any significant benefit derived from cognitive training, while the results for cognitive rehabilitation show promise. Further, well-designed studies of both interventions types are required to obtain more definitive evidence.

One review (Carrion 2013) [48] evaluated the use of cognition-orientated approaches (reality orientation and skills training) to treat patients with mild to severe dementia, specifically AD or

probable AD. None of the 17 RCTs identified were rated as of high methodological quality, and six RCTs were considered to be of poor methodological quality, based on Scottish Intercollegiate Guidelines Network checklists, with a high risk of bias. Sessions of reality orientation therapy involved presenting the patient repeatedly with information to provide them with a better understanding of their surroundings, whilst skills training aimed to help improve cognitive functioning and basic daily activities through training or software exercises. All nine RCTs of reality orientation found better cognitive function in the intervention groups compared with usual activities, no treatment, or occupational or social therapy, although this improvement only reached statistical significance in six trials. Positive effects were observed in most trials of skills training (eight RCTs), statistically significant in only two trials, but these modest improvements failed to persist once the training intervention ended. The five trials that assessed ADL and/or functional scales (one reality orientation and four skills training) all found a non-significant change compared with control. Only two trials, both of reality orientation, measured quality of life. One found a significant benefit of a mixture of reality orientation and other cognitive stimulation exercises versus normal activities (QOL-AD change from baseline: +1.3 vs -0.8, $p = 0.028$). The other, a cross-over study found no significant difference in the Life Satisfaction Index of reality orientation and reminiscence therapy compared with no treatment. Meta-analysis was not possible given the heterogeneity of the studies. The authors stated that their findings should be interpreted with caution due to the poor methodological quality of the included trials, and concluded that higher quality trials are warranted to confirm their findings.

Another Cochrane review (Woods 2012) [49] identified 15 RCTs assessing the effectiveness of cognitive stimulation therapy for improving cognition in patients with a diagnosis of dementia, mainly categorised as AD and/or vascular dementia, although patients with varying cognitive impairment (e.g. amnestic, probable AD, cognitive disturbances) were also noted in the included studies. Cognitive stimulation was defined as engagement in a range of activities and discussions (usually group led) aimed at general enhancement of cognitive and social functioning. The quality of the studies was variable but generally low. Cognitive stimulation therapy was delivered to groups or on an individual basis, and took the form of cognitive exercises or aids, reality orientation approaches, or TV followed by discussion, sometimes in conjunction with anti-dementia medication. The comparators were no treatment, standard or alternative treatment, written tasks, watching TV, or medication alone. Compared with no treatment or placebo, cognitive stimulation therapy showed a clear consistent benefit on cognitive function: the overall effect size (standardised mean difference, SMD) was 0.41 (95% CI 0.25 to 0.57; $p<0.00001$; 14 RCTs). This improvement was maintained one to three months after the cessation of treatment. Cognitive stimulation was also associated with a significant benefit to the combined outcome of self-reported quality of life and wellbeing compared with no treatment (4 RCTs; SMD 0.38, 95% CI: 0.11, 0.65; $p = 0.006$). However, a meta-analysis of four trials found no benefit for cognitive stimulation on ADL and basic self-care skills. The review authors concluded that there was consistent evidence that cognitive stimulation programmes benefit cognition in people with mild to moderate dementia beyond any medication effects. However, the trials were of variable quality with small sample sizes and many lacked sufficient details of the randomisation process.

Another review (Spector 2012) [50] aimed to identify which neuropsychological domains show improvements or maintenance of function in people with mild to moderate dementia participating in cognition-focused psychological interventions (cognitive training, cognitive stimulation and cognitive rehabilitation). Of the 18 RCTs identified, 11 were of cognitive training and seven used cognitive stimulation; there were no trials of cognitive rehabilitation. Cognitive training was defined as guided practice on a set of standardised tasks designed to develop particular cognitive functions such as memory, attention or problem-solving, with regular practice assumed to improve or maintain functioning. Cognitive stimulation referred to a range of activities/discussions (usually group led) aimed at the general enhancement of cognitive functioning through more general learning, usually depending on the integration of multiple cognitive functions (e.g. attention, language, memory and problem-solving). Two of the studies have also been reported in the review of Woods 2012 [49]. Methodological quality, measured using the Jadad scale, varied across studies: seven studies were of high quality, six were medium quality, and five were poor quality. The cognitive training and cognitive skills interventions were diverse in content and many were delivered in conjunction with anti-dementia medication. Sessions typically lasted up to one hour and were given between once and six times per week. For cognitive training it was not possible to draw any conclusions about which (if any) neuropsychological domains are most amenable to change. Three trials found some evidence of enhancement of general cognitive function on the MMSE with cognitive training compared with controls, but there were no significant differences in the remaining five trials assessing this outcome. For cognitive stimulation, however, there was good evidence with six trials finding a significant benefit compared with controls on at least one measure of general cognitive functioning (MMSE, ADAS-Cog, Kingston Dementia Rating Scale). Functional ability and quality of life were not assessed for either of the cognitive interventions. The authors concluded that although the review did not specifically indicate which aspects of cognitive performance are most likely to improve following a cognitive-based intervention, there is strong evidence to support the widespread clinical use of cognitive stimulation. They also acknowledged that methodological details were often insufficient. Hence, assumptions were made about the quality of the included studies based on the information provided.

One review (Huntley 2015) [51] aimed to review the efficacy of cognitive interventions (cognitive stimulation, cognitive training, cognitive rehabilitation, and mixed cognitive training-stimulation), compared with active and non-active controls, in patients with dementia including those with AD and/or vascular dementia. The interventions were defined according to their content: cognitive stimulation – a range of social and cognitive activities to stimulate multiple cognitive domains; cognitive training - repeated practice of standardised tasks targeting a specific cognitive function; cognitive rehabilitation - a person-centred approach to target impaired function; or mixed – interventions using both cognitive training and stimulation methods. 33 RCTs conducted in populations with a mean age greater than 60 years were identified, Many of these RCTs have also been included in the reviews of Woods 2012 [49] (12 of the 15 stimulation studies) and Spector 2012 [50] (five of the seven stimulation studies), but there are slight differences between these reviews in terms of the interventions and outcomes assessed. There were 21 trials of cognitive stimulation interventions, four of cognitive training, and seven of mixed cognitive training and stimulation; no trials of cognitive rehabilitation were found. The quality of the studies, as assessed by the Cochrane Risk of

Bias tool, was variable: 10 studies had no inadequate/unclear ratings for quality criteria, five studies had one, three studies had two, 11 studies had three, and four studies had four. The least adequately addressed criteria were randomisation and allocation concealment. Individuals or groups of patients typically received cognitive stimulation and/or cognitive training as 1 to 2-hour sessions, two to six times weekly. Active controls received an intervention matched in terms of time/social interaction or one with a cognitive component not directly being assed. The non-active control groups comprised waiting list controls, or patients receiving usual treatment or minimal intervention not matched for time/social interaction or with no specific cognitive content. Post intervention, cognitive stimulation showed a significant beneficial effect on the improvement of cognitive function, as measured by MMSE, versus both non-active and active controls (17 RCTs and three RCTs, respectively) and on the ADAS-Cog versus non-active controls (nine RCTs); there were no trials versus active controls. Where meta-analysis was possible, neither cognitive training nor mixed cognitive training-cognitive stimulation had a significant effect on cognition compared with controls, as measured using either the MMSE or ADAS-Cog. Functional ability and quality of life were not measured. The authors concluded that cognitive stimulation improves scores on the MMSE and ADAS-Cog in dementia, but benefits on the ADAD-Cog were generally not clinically significant. They highlighted that comparisons between dementia drug treatments are difficult given problems with blinding of patients and use of adequate placebo controls. The authors also acknowledged that analysis was hampered by the heterogeneity of the studies and controls, and that they only considered clinically useful and recognised cognitive outcome measures.

3.4.3 Exercise (5 reviews data extracted)

One review (Brett 2016) [52] identified 12 RCTs and cluster RCTs evaluating the effects of physical exercise on individuals living with dementia in nursing homes. Studies with a high risk of bias (cut-off score <5), based on a Joanna Briggs Critical Appraisal Tool, had been excluded from the systematic review. A slight majority of the included studies (57%) received a score of at least seven out of ten, which suggests the results were less likely to be biased. Physical exercise interventions were categorised as multimodal (exercise programmes targeting components of physical fitness, cognitive function, functional ability and/or coordination) (six RCTs), supervised walking sessions (five RCTs), music and movement (two RCTs), and hand exercises (one RCT). Interactive controls involved social activities on an individual or group basis for the same duration and frequency as the intervention, whereas non-interactive controls were usual care and activities provided at the nursing home. One control group received no motor intervention, but no further details were provided. Measures of cognition and functional ability varied widely across studies. For cognitive outcomes activities involving music/movement (one RCT) and walking (one RCT) led to significant improvements on the MMSE compared to controls, while over time, a multimodal intervention resulted in significant improvements on the Nurses' Observation Scale for Geriatric Patients (total score and memory subscale) (one RCT) and the French Rapid Evaluation of Cognitive Function test (one RCT). A further trial of multimodal interventions showed that despite a global decline in cognition (using the Brief Cognitive Screening Battery) in all three groups (two intervention and one control), significantly lower rates of decline in the Clock Drawing Test and Verbal Fluency Test components were observed in the multidisciplinary team-led group than in controls. In terms of functional ability, two trials showed improvements in ADL,

as assessed using the Barthel Index, with multimodal (not significant) and walking (significant) interventions. Another trial also showed a significant improvement in ability to transfer from one surface to another with multimodal intervention using the Acute Care Index Function measure, but reduced ability with walking and control interventions. Deterioration in functional ability (indicated by a significant reduction in Katz Index of ADL score) was observed in both multimodal and control groups, although the rate of decline was significantly slower in the multimodal group (one RCT). Two further trials found no significant impact from physical interventions on physical disability or care time. Values of significance (P-values) were not reported throughout the review. 75% or more of the studies that used mood, depression or agitation outcome measures showed a positive effect in at least one quality of life outcome measure. The authors concluded that there is emerging evidence that physical exercise significantly benefits individuals living with dementia in nursing homes. Higher quality research is required to address the limitations the review authors noted: heterogeneity of design, small samples, and short interventions.

A Cochrane review (Forbes 2015) [53] assessed whether exercise programmes for older people (majority aged over 65 years) with dementia improved their cognition, ADL, neuropsychiatric symptoms, depression, and mortality. There were no specific criteria relating to the content of exercise programmes: any type of exercise (including combinations of aerobic-, balance-, or strength-training), frequency, intensity or duration, and setting, were eligible. The quality of the 17 RCTs identified was generally low to medium quality, with the majority having low risk of detection and reporting biases. Randomisation and allocation methods were the least reported criteria and, given the nature of the intervention, blinding of the participants and personnel was not possible. Four RCTs could not be included in the meta-analysis as the relevant data were not available. A variety of measures and instruments were used to evaluate cognitive function and ADL across trials. A meta-analysis of nine trials of physical activities such as aerobics, strength/balance exercise programmes, walking and interactive games found no benefit on cognitive functioning compared with controls receiving usual care or social contact/activities: the estimated SMD was 0.43 (95% CI -0.05 to 0.92, p = 0.08). However, there was some benefit from exercise on the ability of people with dementia to perform ADL: the estimated SMD between exercise and control groups was 0.68 (95% CI 0.08 to 1.27, p= 0.02; six RCTs). Considerable heterogeneity, however, was observed in both analyses. No trials assessed quality of life. The authors concluded that although there is evidence that exercise may improve the ability of people with dementia to perform ADLs, the review findings should be interpreted with caution. The review also revealed no evidence of a beneficial effect on cognition.

One review (Groot 2016) [54] investigated the effect of physical activity (aerobic-only exercise and non-aerobic exercise) on cognitive function in patients diagnosed with any type of dementia, except those presenting with prominent motor features (e.g. Parkinson's disease dementia or Huntington's disease). Non-aerobic exercise was defined as interventions implementing physical activity exercises without causing aerobic exertion (e.g. strength or balance exercises). Studies assessing multi-modal interventions, such as physical activity combined with occupational therapy or cognitive exercises, were not eligible for the review. Patients in the control group were not permitted to receive any type of physical activity other than that considered part of standard care. 18 RCTs were identified. Risk of bias, assessed

using the Cochrane Risk of Bias tool, was low in 10 trials and unclear in the remaining eight trials. Seven trials assessed aerobic activities, predominantly walking-based, five trials assessed non-aerobic physical activities such as exercises, tai Chi and dance/movement programmes, and seven trials combined different components of aerobic and non-aerobic exercise; one trial contained two intervention groups. Compared with standard care or therapies aimed at social interaction, physical activity interventions had a beneficial effect on cognitive function in patients with dementia (16 RCTs; SMD 0.42, 95% CI: 0.23, 0.62; p<0.01) and in the subset of patients with AD (six RCTs; SMD 0.38, 95% CI: 0.09, 0.66; p <0.01). Positive effects were also found for aerobic exercise alone and the combined intervention in the overall patient population. Meta-analysis also demonstrated improvements in ADL with physical activity interventions compared with controls (SMD 1.18, 95% CI: 0.57, 1.79; p<0.01; four RCTs). Quality of life was not measured. The authors concluded that their meta-analysis suggests that physical activity interventions that include aerobic exercises positively influence cognitive function in patients with dementia, independent of the clinical diagnosis and frequency of the interventions. However, they acknowledged that heterogeneity across studies in terms of patient populations and the cognitive tests used may have impacted the results, and it is unclear whether the overall effects of the interventions are sustainable given the variation in intervention period and length of follow-up.

One review (Kiepe 2012) [55] evaluated the efficacy of dance (movement) therapy and ballroom dancing for adults with physical and mental illnesses and found only three RCTs involving patients with dementia-related conditions. Two RCTs were conducted in patients with Parkinson's disease and the third in patients with dementia. Although methodological quality was reported to have been assessed, no details or results were provided except for the authors' comments that there were insufficient details of randomisation and investigators were often not blinded. Cognitive function was assessed in one RCT which compared dance (movement) therapy with regular nursing home activities in patients with dementia. Some improvement in cognition was observed, based on the MMSE, Clock Drawing Test and Picture Description Test. The other two RCTs investigated the impact of ballroom dances such as tango and foxtrot on ADL in patients with Parkinson's disease. The control group participated in strength/flexibility exercises, tai Chi or received no intervention. Balance and co-ordination, assessed by the Berg Balance Scale (one RCT) and six-minute walk test (one RCT) respectively, were both improved in the ballroom dancing group. In addition, one of the RCTs conducted in patients with Parkinson's disease reported that the greatest improvement in the Parkinson's Disease Questionnaire (PDQ-39) was observed in the tango group. The authors noted that RCTs might have been missed, despite extensive literature searches, and heterogeneous methods and outcomes precluded a formal evaluation of publication bias.

One review (Wayne 2014) [56] examined tai chi as an intervention to attenuate age-related cognitive decline across the spectrum from normal cognition to dementia. The review included seven RCTs of patients with cognitive decline, of which five RCTs were of patients with dementia. Based on criteria recommended by the Cochrane Back Review Group, four of these five trials had a low risk of bias, and the fifth trial had a medium risk of bias. Six trials involved tai chi of various styles and formats and one used tai chi in conjunction with cognitive behavioural therapy or social support. One trial also included Mahjong as an intervention. The comparators were exercises, educational programmes, rehabilitation, usual care or wait

list. The results of RCTs studying tai chi exercises were not reported separately for patients with dementia. Across all RCTs of adults with cognitive decline, tai chi was found to have a small but significant effect on cognition, as assessed using the MMSE, compared with controls (Hedges' g = 0.35; p = 0.004) and other active interventions (Hedges' g = 0.30; p = 0.002). Its effects on ADL and quality of life were not assessed. Although tai chi offers potential to enhance cognitive function in older adults, larger methodologically sound trials with longer follow-up periods are needed. The authors acknowledged that their review included some studies with poorer methodological quality and that heterogeneity in outcomes across studies limited meta-analysis to commonly measured outcomes.

3.4.4 Occupational therapy (1 review data extracted)

One review (Ojagbemi 2016) [57] assessed occupational therapy (OT) interventions in improving quality of life of persons with dementia. OT-based interventions were defined as systematic approaches often designed primarily to improve or maintain functioning and independence in PwD. OT approaches included education about dementia and the potential risk to functional independence, assessment of the current strengths and abilities of the PwD, and training in practical skills, coping, and adaptive and compensatory strategies. Eight RCTs were found; the diagnosis of dementia in these RCTs was based on standard clinical criteria according to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, in four studies, and the International Classification of Diseases, tenth revision, in one study. The other studies either relied on 'clinician best judgment' of dementia or a Mini-Mental State Examination score <24. The populations were mostly mild to moderate dementia. One trial was assessed to be at low risk of bias and seven at moderate risk of bias. The control groups also received other forms of effective interventions such as usual care (including the use of cholinesterase inhibitors and memantine) and structured or unstructured interactions with interventionists. Cognition and functional ability were not reported. There was no significant difference in the quality of life of participants receiving OT interventions compared with controls in five of the eight trials considered, and a difference favouring OT in the remaining three studies. The overall effect of active intervention on quality of life in the studies showed that OT interventions had a small and non-significant effect on quality of life compared with control (SMD = 0.33, 95% CI = −0.08 to +0.74, overall effect size = 1.60, p = 0.11). The authors concluded that the evidence from the present review does not support the specific use of OT interventions for the improvement of quality of life in people with dementia under pragmatic clinical conditions at this time. They may be best used as part of a comprehensive range of interventions for such individuals. The studies had significant heterogeneity (I^2 = 85%), which was partly explained by differences in the participant characteristics, types and frequency of OT interventions, quality of life measures, and varying lengths of follow-up in the included studies. Grey literature, which may be a valuable source of materials dealing with the specific review question, was not considered.

3.4.5 Psychotherapy (1 review data extracted)

One review (Cheston 2016) [58] assessed the evidence base for individual and group psychotherapy (meeting the definition provided by the British Association of Counselling and Psychotherapy (BACP), i.e. focusing on "talking about life events, feelings, emotions,

relationships, ways of thinking and patterns of behaviour"; occurring regularly at specific times and within a specific context and aiming to help individuals to understand themselves and their illness, promoting effective change of thinking or behaviour or otherwise enhancing the person's wellbeing) with people affected by dementia (AD, vascular dementia, Lewy-body dementia or a mixed condition). It identified 19 articles reporting 16 studies with eligible populations (15 relevant to this overview). 10 papers either did not provide outcome data for 85% or more of participants who were randomised into the study or did not provide enough information to allow reporting on this. The interventions were group or individual psychotherapeutic interventions for people with dementia that meet the definition provided by the British Association of Counselling and Psychotherapy (BACP). Thus, in order for psychotherapeutic interventions to be included, the intervention must: focus on "talking about life events, feelings, emotions, relationships, ways of thinking and patterns of behaviour"; occur regularly at specific times and within a specific context and aim to help individuals to understand themselves and their illness, to promote effective change of thinking or behaviour or otherwise to enhance the person's wellbeing. The comparators were mostly usual care.

Cognitive outcomes were not reported for cognitive behavioural therapy (CBT), generic group psychotherapy, or multicomponent interventions. For person-centred counselling, one RCT showed a significant increase in MMSE scores at six months from an average of 16 (SD=4) at baseline to 18 at 6 months (SD=5; $p<0.01$) and 19 (SD=5; $p<0.01$) at 12 months. MMSE decreased in the control group. For psychodynamic interpersonal therapy, one RCT found no significant differences on the main outcome measures, including cognition (MMSE). For validation therapy (VT), which incorporates a range of recognised psychotherapy and counselling techniques including empathic listening, the results from two were inconclusive.

For functional outcomes following CBT, the single adequately powered RCT showed no difference in ADL. For person-centred counselling, a single RCT showed no significant effect on the Barthel index. For psychodynamic interpersonal therapy, one RCT found no significant differences on their main outcome measures, including ADL. VT was assessed in two RCTs where the results from both studies were inconclusive. Functional outcomes from generic group psychotherapy and multicomponent interventions were not reported.

Quality of life was not reported in psychodynamic interpersonal therapy or VT studies. For CBT, the only adequately powered RCT showed that the quality of life ratings made by people affected by dementia (but not by carers) improved in the intervention group. One RCT of person-centred counselling found that, at 12 months, participants in the treatment arm had improved quality of life (proxy-rated QoL-AD) of 2.14 (0.83 to 3.45; $p = 0.0013$). For generic group psychotherapy, two RCTs were included. After controlling for baseline differences and changes in cognition, the authors reported significant improvements in quality of life: QoL-AD scores ($b=1.74$; $p<0.001$), $R^2=.05$, effect size=0.44. The second study was a pilot study and found that quality of life improved in the intervention group compared to control group (effect size 0.46), but that this improvement was not significant after adjusting for baseline differences.

Various multicomponent interventions were reviewed. One RCT tested an intervention named Preserving Identity and Planning for Advanced Care or PIPAC (four-session individual

intervention employed a combination of self-adjusting, future planning and self-maintaining, reminiscence-based work). After controlling for baseline differences, results revealed differences between intervention and control arms at post-treatment for quality of life on the BASQID (effect size=0.07). Another study involved a peri-diagnostic intervention in which participants with suspected dementia were referred to a specialist mental health team and received pre-diagnostic wellbeing assessment and counselling followed by a diagnostic consultation with written feedback and six monthly home visits for post-diagnostic support. Compared to usual care, after accounting for baseline variability, there was greater improvement in wellbeing in the recovery group as shown by the WHO-5 (61, SD=10 vs. 58, SD=13; p = 0.03).

The authors concluded that the strongest evidence supported the use of short-term group therapy after diagnosis and an intensive, multi-faceted intervention for nursing home residents. The authors acknowledged the following limitations:

- They only reviewed papers which reported in English;
- They focussed on psychotherapy with people AD, vascular, Lewy body or mixed dementia;
- They excluded both support groups and family therapy;
- They tried to maintain a broad definition of psychotherapy, but noted that they might have excluded some interventions which did not meet the BACP definition but which still have psychotherapeutic characteristics; ;
- The psychotherapeutic literature is distinguished by heterogeneity.

A number of design flaws also limited their ability to interpret these results. For example, a statistically significant result is not equivalent to a therapeutically significant impact. Many studies did not report effect sizes, whilst for those that did the effect sizes were often modest.

3.4.6 Reminiscence Therapy (1 review data extracted)

One review (Huang 2015) [59] assessed reminiscence therapy (defined as inducing a vocal or silent recall of past activities, events, and experiences in the life of a person by using tangible prompts) in elderly people with dementia. It identified eight RCTs including patients with AD, vascular dementia or mixed, but none met all six criteria to be graded as high methodological quality. Themes in treatment protocols included family, childhood memories, meaningful events (e.g. jobs and marriage), seasonal events in the past, festivals, and personal achievements. Five studies used a variety of tools comprising pictures, photographs, old-time music, film, and the flavour of food, as well as other familiar items from the past to excite dementia participants to reminisce. Reminiscence therapies were performed at least once a week. The average number of sessions was 9.46, ranging over four to 18 weeks. The mean time spent in the interventions was 595 minutes (range: 240 to 1440 minutes). Comparators were active controls (i.e., social support and contact) or inactive controls (e.g. usual care or no treatment). For cognitive functions, the overall mean effect size was significant (g = 0.18, 95% confidence interval [CI] 0.05–0.30, p = 0.007). The test for heterogeneity was not significant (Q=7.67, p = 0.66, I^2=0.0%). Regarding the long-term effect (6–10 months after completion of treatment) of reminiscence on cognitive functions, the pooled

effect size from three included studies was not statistically significant (g = 0.11, 95% CI 0.09–0.32, p = 0.26). The test of heterogeneity was not significant (Q=2.12, p = 0.35, I^2 = 5.5%). Functional ability and quality of life were not reported.

The authors concluded that this meta-analysis confirms that reminiscence therapy is effective in improving cognitive functions in elderly people with dementia, suggesting that regular reminiscence therapy should be considered for inclusion as routine care for the improvement of cognitive functions in elderly people with dementia, particularly in institutionalised residents with dementia. However, the review's search strategies and selection criteria might have resulted in other related articles being missed from the review. Also, some of the moderating effects, such as intervention types (group vs individual) and control conditions (inactivity vs activity), could not be examined because only one study was included in the subgroup.

3.4.7 Support Groups (1 review data extracted)

One review (Leung 2015) [60] evaluated the effectiveness of social support group interventions (defined according to the definition provided by Schmall (1984)[1]) for older adults with dementia, AD according to DSM-IV, ICD-10 or comparable and participants with a diagnosis of MCI. It found two relevant RCTs. In one study, all participants were diagnosed with dementia, with a score of <2.0 on the Clinical Dementia Rating Scale, indicative of mild dementia. The mean Mini-mental state examination (MMSE) was 24.8 and 22.9 for the intervention and the control group, respectively. In the other study, the diagnosis of dementia was verified by the individual's care physician. The mean MMSE scores at baseline was 23.4, whereas 86% of the sample had a Clinical Dementia Rating Scale score of 0.5, consistent with early-stage dementia. Although both studies reported randomisation, detailed description of random sequence generation was not provided. Information on allocation concealment was generally missing, with one of the studies classified as high risk in this domain. In both studies, there was insufficient information provided in relation to blinding of the outcome assessment; however, both reported attrition adequately. There was one instance of selective reporting, indicative of high risk of bias in this domain. The social support group interventions were treatment programmes that provided any of the following: (i) education about dementia or MCI; (ii) mutual/peer support; (iii) education/mutual support; and (iv) opportunities to express feelings and concerns. The intervention in one RCT was a social support group intervention, whereas in the other RCT it was multicomponent, encompassing CBT and exercise as well as the social support group intervention. In one RCT, the control group (delayed treatment) was given information about educational programmes. The other RCT had a treatment as usual control group. Cognitive and functional outcomes were not reported. For quality of life, controlling for age, sex and change in MMSE scores, participants in the social support condition reported significantly improved QoL-AD scores, compared with those in the usual care group (β=1.74; p<0.001), R^2=0.05, effect size d=0.44.

[1] Specifying as a social support group a treatment programme that provided any of the following: (i) education about dementia or MCI; (ii) mutual/peer support; (iii) education/mutual support; and (iv) opportunities to express feelings and concerns. Examples include support groups that aim towards allowing people with dementia or MCI to gain better understanding of their illness, have their concerns addressed, express feelings, share experiences, offer emotional mutual support and develop their coping strategies.

The authors concluded that this review provides some evidence for the effectiveness of social support group interventions for people with early-stage dementia. They noted that the findings must be viewed in light of the small sample size as well as the heterogeneous characteristics of trials published in the topic. Although both studies evaluated a social support group intervention that was well structured and was based on a social model, the intervention in one study was multicomponent, combining physical exercise and a CBT programme with a social support group intervention. Other variants included the intensity and frequency of the social support group offered.

3.4.8 Multiple types of interventions (2 reviews data extracted)

One review (Bunn 2016) [61] assessed the effectiveness of different interventions aiming to improve, maintain or facilitate food/drink intake indirectly in people with cognitive impairment or dementia (across all settings, levels of care and support, types and degrees of dementia). A total of 19 RCTs were included, of which 15 were conducted in patients with dementia, including AD. The majority of studies were of medium to high risk of bias and only two RCTs, both of exercise, had a low overall risk of bias. The specific interventions of interest were food service or dining environment modification (e.g. furniture, noise levels and other sensory adjustments, or any alterations to how the food was served), interventions with an educational and/or awareness component directed at patients and/or caregiver (e.g. tailored nutrition), exercise (e.g. tai chi, exercise programme), behavioural therapy (e.g. verbal prompts, relaxing music prior to a meal, Montessori activities), or multicomponent interventions comprising at least three components including at least one of the aforementioned. Comparators were typically usual care, placebo, or no added intervention. There were six RCTs of education/training interventions, six of behavioural therapy, and three of exercise; no RCTs of environmental modification and multicomponent interventions were identified. The included studies used a diverse range of measures to assess cognitive functioning, functional ability and quality of life. Across all studies, the review found no clearly effective or ineffective interventions for any of the outcomes measured. The authors concluded that they had not found any definitive evidence to support the effectiveness, or lack of effectiveness, of specific interventions but studies were small and short term. A variety of promising indirect interventions need to be tested in large, high-quality RCTs to address the limitations of the review, specifically the small size and low validity of the included trials, and the heterogeneity of the interventions and outcomes.

One review (Cabrera 2015) [62] assessed which non-pharmacological interventions are considered best practice, in terms of improving quality of care and/or quality of life, for people with dementia living in long-term care facilities. Thirteen of the 31 RCTs identified reported outcomes of interest for relevant populations, in particular patients with dementia or AD. The quality of the trials was not reported, although the Cochrane Risk of Bias tool was applied. Interventions in the relevant RCTs were categorised as psychosocial and educational (four RCTs), physical activity (three RCTs), sensorial therapies (three RCTs), and complex interdisciplinary interventions (two RCTs). Psychosocial and educational activities could take the form of individualised activities to address the individual, social and environmental aspects of a person's life, group activities to provide stimulation and socialization, or reminiscence therapy with the aim to increase well-being. Physical activity interventions could be

individualized or group-led exercise programmes, whilst sensorial therapies used multi-sensory approaches, generally tailored to individual needs. Complex interdisciplinary interventions were defined as those involving different health and social professionals, such as functional rehabilitation combined with occupational therapy, and physiotherapy combined with occupational therapy and exercises. The review found no consistent effects on cognition, functional ability or quality of life/wellbeing of the intervention compared with controls (e.g. conversation, other activity, functional rehabilitation, reduced or no intervention, or placebo), where measured.

For cognitive functioning, significant improvements, where observed, were only reported in one study each of a group story telling programme (general awareness; $p<0.05$), individualised approach (communication; $p = 0.000$), occupational therapy with/without functional rehabilitation (cognition; $p<0.001$) and reminiscence therapy (cognitive function; MMSE, $p = 0.0015$).

For functional ability, one interdisciplinary study of physiotherapy combined with occupational therapy, exercise, and physiotherapy alone found significant improvements in functional ability compared with no motor intervention (both comparisons $p<0.05$).

Results were inconsistent across studies evaluating quality of life/wellbeing. One study found an improved quality of life score with individual unstructured therapy, but no significant difference versus an individualised structured activity. Greater wellbeing was observed in one study comparing an interdisciplinary programme with functional rehabilitation alone ($p<0.001$), whereas another study of a high-intensity functional exercise programme found an improvement on wellbeing scores post-intervention ($p = 0.03$). The authors concluded that psychosocial interventions have been shown to have the potential to improve the quality of life and quality of care of people with dementia in nursing homes. However, there is not enough evidence to support the effectiveness of non-pharmacological interventions in general. Limitations noted included the possible omission of relevant interventions not listed as keywords, the exclusion of cognitive stimulation interventions, small samples sizes, sample heterogeneity, short follow-up periods, and inadequate description of the instruments applied. The authors also highlighted that RCTs may not be the best study design given difficulties in blinding the patients, and that many studies did not use blind outcome assessment.

3.4.9 "Other" types of intervention (7 reviews data extracted)

One review (Forbes 2009) [63] assessed the evidence of the effectiveness of any form of intervention involving the use of bright light, at any intensity and duration, in managing cognitive, sleep, functional, behavioural, or psychiatric disturbances associated with dementia. The light sources were usually a light box placed approximately one metre away from the participants at a height within their visual fields; a light visor worn on their heads; ceiling mounted light fixtures; or 'naturalistic' light therapy, known as dawn-dusk simulation, that mimics outdoor twilight transitions. To be eligible patients must have had a diagnosis of dementia according to accepted criteria such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R, DSM-IV), the National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's Disease and Related Disorders

Association (NINCDS-ADRDA), or ICD-10 (see Table 3.1 for further details). The review found three RCTs, one at low risk and two at unclear risk of bias. Morning/daytime bright light, evening/afternoon bright light or dawn-dusk simulation with bright white light had no effect on cognition, compared with dim light. One study measured functional limitations using NI-ADL after six weeks, one and two years of treatment (morning/daytime bright light vs control). After six weeks of treatment, light therapy had a positive effect in attenuating the increase in functional limitations (MD= -5.00, 95% CI -9.87 to -.13, p = 0.04). After one year of treatment, there was no significant effect (MD -5.00, 95% CI -11.16 to 1.16, p =0.11), however, a significantly less steep increase in functional decline was seen after two years of light therapy (MD= -16.00, 95% CI -26.21 to -5.79, p = 0.002). The authors concluded that there is insufficient evidence to assess the value of light therapy for people with dementia. Most of the available studies are not of high methodological quality, with small sample sizes.

One review (Fritz 2015) [64] aimed to determine the effectiveness of motor-cognitive dual-task training (DTT) (i.e. training in motor-cognitive dual-tasks, e.g., walking while talking) compared to usual care on mobility and cognition in adults (>18 years old) with a central neurologic disorder diagnosis. It included one relevant RCT in elderly adults with dementia, which scored 3/5 using the criteria recommended by the Cochrane Back Review Group in the "Clinical Relevance Scale" (maximum score = five points). This scale evaluates criteria relevant to physical therapy practice and is suitable for the evaluation of neurologic clinical trials. To date, there are no established cut-off scores for high- and low-quality studies with this tool. In this trial, specific DTT and additional progressive resistance-balance and functional-balance training were performed in groups of 4–6 persons for 12 weeks (two hours/week), compared with one hour of supervised motor placebo group training twice per week (flexibility exercises, calisthenics and ball games while seated). There were no significant differences in cognition as measured by the Trail Making Test. Following DTT, individuals with AD demonstrated significantly reduced Dual Task Cost (DTC) for both velocity and stride length compared to the control group, where DTC was unchanged. This held true for dual-task walking when the secondary task was addition or subtraction. Quality of life was not reported. The authors concluded that improvement of dual-task ability in individuals with neurologic disorders holds potential for improving gait, balance and cognition, and that motor-cognitive dual-task deficits in individuals with neurologic disorders may be amenable to training. However, they acknowledged the paucity of RCTs and the small sample size and short duration of published studies.

One review (Forrester 2014) [65] assessed the efficacy of aromatherapy (i.e. all doses, frequencies, and fragrances, with essential oils defined as “highly fragrant essences extracted from plants by distillation, which evaporate readily”) as an intervention for people with dementia and found two RCTs relevant to this overview. Details of the populations searched for and the populations found can be found in Table 3.1. The overall quality of the evidence, based on GRADE, was very low. The comparators were:

- Study 1: active medication (donepezil) and placebo aromatherapy (sunflower oil) or placebo medication and placebo aromatherapy;
- Study 2: placebo aromatherapy (sunflower oil) only.

Cognitive function was not reported. For ADL, one study found no significant difference after 12 weeks of treatment in functional performance measured using the Barthel scale of Activities of Daily Living (n = 63, MD -0.50, 95% CI -1.79 to 0.79). Quality of life was measured after 12 weeks using the Blau QOL Scale in one study. There was no statistically significant difference in quality of life between the participants receiving aromatherapy and those receiving placebo (n = 63, MD 19.00, 95% CI -23.12 to 61.12). The primary outcomes of the review were agitation, behavioural symptoms and adverse effects. The authors concluded that the benefits of aromatherapy for people with dementia are equivocal. They acknowledged limitations including the fact that four out of the seven studies they included did not report any data that they could use in the analysis, and that the three studies that did report data were small with short follow-ups. They tried to identify all relevant trials through the searches, however, they might have failed to identify some studies.

One review (Han 2016) [66] assessed the benefits of individualised leisure and social activity interventions for participants reported to have any type and stage of dementia. It identified three relevant RCTs, one of high quality and two of moderate quality, in populations with moderate to severe dementia. Interventions were individually tailored for promoting leisure or social participation, with standardised, structured activity in which a participant chooses an activity among five types of activity in the kit (geography, fun foods, animals, vegetables, and musical instrument) for mental stimulation/ reminiscence. Comparators were unstructured activities or usual care. Although improved quality of life was reported no data were shown. The authors reported that their review found that individualised leisure and social activities can benefit people with dementia in a number of ways, in particular, by promoting engagement, improving affect, and reducing both agitation and withdrawn behaviours.

One review (Hsu 2015) [67] evaluated the effects of non-invasive brain stimulation (repetitive transcranial magnetic stimulation or transcranial direct current stimulation) on cognitive function in patients with AD. Details of the population searched for and population found are contained in Table 3.1. It found 11 RCTs: six double-blind, one single-blind and four unblinded. Only one study reported drop-outs. One study did not compare the differences across stimulation conditions. Five studies reported point estimates and variability, but six did not. The comparator was sham stimulation. For cognition, a significant mean effect size of 1.35 (95% CI: 0.86-1.84, $p<0.001$) was found, which after adjustment for possible publication bias was still clinically meaningful and large at an effect size of 0.78. Functional ability and quality of life were not reported. The authors concluded that non-invasive brain stimulation has a positive effect on cognitive function in people with AD. However, publication bias was identified by the funnel plot. Studies were of short duration so the sustainability of the effect is unknown. Studies were heterogeneous with respect to intervention protocol, outcome measures, methodological quality and participant inclusion criteria. Also, some publications in non-English languages may have been missed.

One review (Lee 2009) [68] assessed the clinical effectiveness of needle acupuncture with or without electrical stimulation as a treatment for AD and identified three poor quality RCTs. None of the included RCTs reported details of population (beyond “AD”), methods of randomisation, details of allocation concealment, or described patient or assessor blinding. None provided sufficient details of drop-outs and withdrawals. The comparators were:

- Study 1: (A) Nimodipine or (B) Herbs or (C) electro-acupuncture (EA) + herbs;
- Study 2: (A) Huperzine or (B) Psychological consultation;
- Study 3: Perphenazine.

Two RCTs assessed the effectiveness of acupuncture on cognitive function compared with drug therapy. Their results suggested no significant effect in favour of acupuncture [n = 72, weight mean difference (WMDs), -0.55; 95% confidence intervals (CIs) -1.31 to 0.21, p = 0.15, heterogeneity: I^2 = 0%]. Two RCTs tested acupuncture for changes in ADL. One RCT reported that acupuncture was less effective than drug therapy for ADL, while the other reported the opposite. The meta-analysis of these data showed significant effects for drug therapy compared with acupuncture (n = 72, WMD, -1.29; 95% CIs: -1.77 to -0.80, p < 0.001, heterogeneity: I^2 = 0%). Quality of life was not reported. The authors noted that the number of studies was small, and the evidence did not demonstrate the effectiveness of acupuncture for AD. The authors acknowledged they might have missed relevant studies, and that their review was limited by the paucity of trials and the often suboptimal methodological quality of those trials.

One review (Ueda 2013) [69] investigated the effects of music therapy (a single music-related experience or a combination of music-related experiences such as singing, listening, performing, rhythmic exercising, and/or improvising) on behavioural and psychological symptoms of dementia, cognitive function and ADL in older individuals who were formally diagnosed with any type of dementia occurring with Parkinson's Disease or Alzheimer's Disease, vascular dementia, frontotemporal dementia, or other types included in the Diagnostic and Statistical Manual of Mental Disorders-IV, the International Classification of Diseases-10, or other accepted diagnostic criteria. It identified 6 relevant RCTs, with populations with mild to moderate senile dementia of Alzheimer's type; vascular dementia; frontotemporal dementia; dementia with Lewy bodies; mixed or other type of dementia. On the 16-point Critical Appraisal Skills Programme scale, the six relevant RCTs scored 13, 11, 11, 10, 10 and 9, respectively. A sensitivity analysis was conducted comparing studies scoring ≥10 points versus ≤9 points, suggesting that a score of 10 or greater represents higher quality studies (although not stated explicitly). The comparator was not stated. Across all studies (randomised and non-randomised trials), music therapy had no effect on cognition (SMD 0.17, 95% CI -0.02 to +0.36, p=1.00) or on ADL (SMD 0.05, 95% CI -0.23 to +0.34, p = 0.93). Quality of life was not reported. The authors concluded that music therapy had moderate effects on anxiety and small effects on behavioural symptoms. However, they noted heterogeneity in study inclusion criteria, methodological quality, design, and outcome measures.

3.4.10 Eligible systematic reviews that found zero relevant RCTs

Five of the systematic reviews that were eligible for this overview were not data extracted because they were found to contain no RCTs relevant to the populations of interest. In general, the interventions they studied were found to have been covered by more recent reviews. However, two of these reviews were of environmental factors, not all of which might have been assessed in other reviews (Anderiesen 2014 [29]; Whear 2014 [30]).

One review (Anderiesen 2014) [29] investigated environmental factors by reviewing empirical studies that measured the effects of physical environmental stimuli on the physical activity of nursing home residents suffering from dementia. The literature was searched from 1993 to 2012 for studies that exclusively intervened with a physical element in the architectural building layout, interior design or ambience of the nursing home environments, such as building layout, outdoor, interior, design/soft furnishings, colour, music, and lighting. However, the severity of the patients' dementia was not a selection criterion, and the condition of patients in the included studies ranged from healthy to severe dementia. Architectural features and interior design features were the particular areas in which no RCTs were identified.

The primary objective of the other review (Whear 2014) [30] was to investigate the impact of gardens and outdoor spaces on the mental and physical wellbeing of people with dementia who are resident in care homes. The literature was searched from database inception to February 2013 for both qualitative and comparative, quantitative studies on the use of gardens and outdoor spaces in a care home. There were no specific eligibility criteria relating to garden/outdoor features, and the included studies looked at a range of interventions including, but not limited to, garden design, time spent outdoors, and horticultural therapy. No RCTs relevant to this overview were identified.

The remaining three reviews were on subjects also covered in data extracted reviews.

Egan 2010 [31] looked for studies on enhancing verbal communication using memory books; education and training programs for the communication partner, or activity-based programming (e.g. walking or preparing breakfast). Communication outcomes were specified, but not cognitive, function or quality of life outcomes.

Hindle 2013 [70] studied cognitive training, exercise and physical interventions (any form of physical rehabilitation), combined cognitive and physical interventions, and brain stimulation techniques in a population with Parkinson's disease. Patients were cognitively healthy, cognitively impaired, or with depression; none had PD dementia.

Hopper 2013 [71] also searched for studies on cognitive rehabilitation. Study designs searched for were quasi-experiment crossover or within-subjects designs, pre-test/post-test comparison and single-subject designs.

3.5 RISK OF BIAS IN INCLUDED REVIEWS

Table 3.2: Summary of Risk of Bias Assessment

Review	Was an 'a priori' design provided?	Was a comprehensive literature search performed?	Was a list of studies (included and excluded) provided?	Were the characteristics of the included studies provided?	Overall quality assessment*
Abdelhamid (2016) [38]	Yes	Yes	Not clear	Yes	Moderate
Bahar-Fuchs (2013) [47]	Yes	Yes	Yes	Yes	High
Brett (2016) [52]	Yes	Not clear	Yes	Not clear	Moderate
Bunn (2016) [61]	Yes	Yes	Not clear	Yes	Moderate
Burckhardt (2016) [39]	Yes	Yes	Yes	Yes	High
Cabrera (2015) [62]	Yes	Not clear	Not clear	Not clear	Poor
Carrion (2013) [48]	Yes	Yes	Not clear	Yes	Moderate
Cheston (2016) [58]	Yes	Yes	Not clear	Yes	Moderate
Farina (2012) [44]	Yes	Yes	Yes	Yes	High
Forbes (2009) [63]	Yes	Yes	Yes	Yes	High
Forbes (2015) [53]	Yes	Yes	Yes	Not clear	Moderate
Forrester (2014) [65]	Yes	Yes	Yes	Yes	High
Fritz (2015) [64]	Not clear	Yes	Not clear	Yes	Moderate
Groot (2016) [54]	Yes	Yes	Not clear	Yes	Moderate
Han (2016) [66]	Not clear	Yes	Not clear	Yes	Moderate
Hsu (2015) [67]	Not clear	Yes	Not clear	Yes	Moderate
Huang (2015) [59]	Yes	Yes	Not clear	Yes	Moderate
Huntley (2015) [51]	Yes	Yes	Not clear	Not clear	Moderate
Kiepe (2012) [55]	Yes	Not clear	Not clear	Yes	Moderate
Lee (2009) [46]	Yes	Yes	Not clear	Yes	Moderate
Lee (2009) [68]	Not clear	Yes	Not clear	Yes	Moderate
Leung (2015) [60]	Not clear	Yes	Yes	Yes	Moderate
Li (2014) [42]	Not clear	Yes	Not clear	Yes	Moderate
Mestre (2009) [45]	Yes	Yes	Yes	Yes	High
Miroddi (2014) [41]	Not clear	Yes	Not clear	Yes	Moderate
Ojagbemi (2016) [57]	Not clear	Yes	Not clear	Yes	Moderate
Onakpoya (2015) [40]	Not clear	Yes	Not clear	Yes	Moderate

Review	Was an 'a priori' design provided?	Was a comprehensive literature search performed?	Was a list of studies (included and excluded) provided?	Were the characteristics of the included studies provided?	Overall quality assessment*
Spector (2012) [50]	Yes	Not clear	Not clear	Not clear	Poor
Ueda (2013) [69]	Not clear	Yes	Not clear	Yes	Moderate
Wayne (2014) [56]	Yes	Yes	Not clear	Yes	Moderate
Woods (2012) [49]	Yes	Yes	Yes	No	Moderate
Yang (2013) [43]	Yes	Yes	Not clear	Yes	Moderate
Yang (2016) [6]	Not clear	Yes	Not clear	Yes	Moderate

*Section 2.5 describes how this overall assessment was reached.

3.6 RECENT RCTS

The EndNote library of potential trials (provided by NICE) was rapidly assessed by a single reviewer in order to identity RCTs assessing the interventions evaluated by the included reviews, published after the searches for the relevant review were conducted.

204 unique RCTs were identified in this way, and are listed in Appendix E, by intervention. One study (Amieva 2016) reported on two interventions and is listed under both “Psychotherapy” and “Cognitive rehabilitation”.

Section 4: Discussion

4.1 KEY MESSAGES OF ELIGIBLE REVIEWS

We found evidence from three reviews that cognitive stimulation improves cognitive function, but no strong evidence for other cognitive approaches or other interventions assessed in this review, although evidence does suggest that physical activity may have positive effects in patients with dementia. One of these reviews (Huntley) included many of the studies from the other two reviews, but there were differences between the reviews in terms of the interventions and outcomes assessed. Hence all three reviews have been reported.

4.2 GAPS IN THE EVIDENCE BASE

Two areas in which we might have expected to have identified systematic reviews, but did not, were physiotherapy and assistive technologies. In the absence of reviews focusing on physiotherapy techniques, it would be reasonable to consider they would be covered through the various reviews we found on exercise. However, none of these reviews explicitly stated physiotherapy or physiotherapist-led sessions amongst their interventions of interest and very few of their included trials appear to have stated as much; for example, it is unclear whether exercise programmes were steered by or tailored to the individual by physiotherapists. In addition, in the absence of more comprehensive details of the control interventions we cannot eliminate the possibility that physiotherapy delivered by health care workers has not been considered standard or usual care. Only one systematic review explicitly referred to physiotherapy, as a component of complex interdisciplinary interventions involving different health and social professionals. Assistive technologies is a relatively new field, possibly too recent for there to have been systematic reviews published within the dates if the literature search; there may have been insufficient time to generate enough trials to warrant any systematic reviews.

4.3 LIMITATIONS OF AVAILABLE EVIDENCE

Small numbers of RCTs, often with small sample sizes and inadequate methodological quality, are available to assess the interventions studied in this overview, and where reported, the methodological quality of the RCTs was generally inadequate, although assessment was often hindered by inconsistent and poor reporting in the original studies. Within each category of intervention considered in this review, studies assessed a diverse range of interventions, with limited numbers of large RCTs examining each type. Meta-analysis was often precluded by the lack of relevant RCTs and heterogeneity in study designs/methods, populations, interventions, controls and outcome measures. There is a need for more, large, high-quality RCTs.

4.4 CONCLUSIONS

Overall, the research evidence is reasonable for cognitive stimulation approaches but weak for other interventions.

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APPENDIX A: Detailed Risk of Bias Assessments for Eligible Reviews

Detailed Risk of Bias (AMSTAR) assessments for each data extracted study (33)

Abdelhamid (2016) [38]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	The protocol is published, with the full MEDLINE search strategy, on Prospero. Clear objectives and inclusion criteria.	Yes
Was a comprehensive literature search performed?	A complex MEDLINE search strategy, adapted for 12 further databases (EMBASE, CINAHL, PsycInfo, five Cochrane Databases, meta-register of controlled trials, ALOIS (Cochrane Dementia and Cognitive Improvement Group comprehensive register of dementia trials), Dissertation and Thesis abstracts, and International Alzheimer's Disease Research Portfolio (IADRP). Bibliographies of included studies and lists of included/excluded studies from relevant reviews were checked	Yes
Was a list of studies (included and excluded) provided?	Included studies table and supplementary file; not excluded studies	Not clear
Were the characteristics of the included studies provided?	Included studies table and supplementary file	Yes
Overall grade:	**Moderate**	

Bahar-Fuchs (2013) [47]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	This is a Cochrane review for which there is a published protocol. Clear research objectives and eligibility criteria were stated in the review.	Yes
Was a comprehensive literature search performed?	"A range of electronic databases (including MEDLINE, EMBASE, CINAHL, PsycINFO, LILACS), ALOIS, trials registers (including ISRCTN, UMIN, the WHO portal) and Cochrane CENTRAL was searched from Apr 2006-Nov 2012"; search strategies/keywords provided in the appendices. States that additional searches were performed using many of the sources previously listed, but doesn't describe all these other sources.	Yes
Was a list of studies (included and excluded) provided?	Separate lists of studies included in and excluded from the review.	Yes
Were the characteristics of the included studies provided?	Provides separate summary tables of patient characteristics in intervention and control groups, interventions and timing of outcome assessments; details of control interventions and outcome measures not summarised but reported within separate tables of included studies, along with more comprehensive intervention details.	Yes
Overall grade:	**High**	

Brett (2016) [52]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	This systematic review was informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement. Clear research objectives and inclusion criteria were stated.	Yes
Was a comprehensive literature search performed?	A comprehensive literature search was undertaken using a range of databases (including PubMed and The Cochrane Library) to retrieve relevant studies for the review; search terms were reported but the search dates were not. In addition, references of review papers were checked and snowballing was used to locate additional references.	Not clear
Was a list of studies (included and excluded) provided?	Included studies table; only studies excluded because of methodological score below cut-off point (mean score minus 1 standard deviation) were listed.	Yes
Were the characteristics of the included studies provided?	No participant characteristics in Included studies table	Not clear
Overall grade:	**Moderate**	

Bunn (2016) [61]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Review protocol was registered on PROSPERO (CRD42014007611). Clear review objectives and inclusion criteria stated in the review.	Yes
Was a comprehensive literature search performed?	13 databases including MEDLINE searched from inception to March 2014. Bibliographies (included studies) and reference lists (reviews) checked. No search terms but full MEDLINE search strategy provided on PROSPERO.	Yes
Was a list of studies (included and excluded) provided?	Included studies tabulated according to intervention. No list/table of excluded studies	Not clear
Were the characteristics of the included studies provided?	Study characteristics summarized in tables in main report, with more in-depth info provided in supplemental tables.	Yes
Overall grade:	**Moderate**	

Burckhardt (2016) [39]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	This is a Cochrane Review for which there is a published protocol. Clear research objective and inclusion/exclusion criteria (PICO) stated in the review.	Yes
Was a comprehensive literature search performed?	Relevant Cochrane specialised register and 6 other sources (databases/trials registries) searched December 2015. Search strategy provided in Appendix. Manufacturers of PUFAs, organizations and key authors contacted for additional/unpublished or ongoing studies, and reference lists checked.	Yes
Was a list of studies (included and excluded) provided?	Separate reference lists of studies included and excluded from the review were provided	Yes
Were the characteristics of the included studies provided?	Summary table provides brief study characteristics (reports standard deviations not ranges), and each study described in-depth in individual tables	Yes
Overall grade:	**High**	

Cabrera (2015) [62]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	This systematic review was informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement. A clear research question and eligibility criteria were stated.	Yes
Was a comprehensive literature search performed?	MEDLINE, CINAHL and the Cochrane Methodology Register were searched; the search strategy/keywords were provided. The last search was run 2013 and articles published 1990-2013 were eligible for inclusion. Other approaches to identify further studies (e.g. handsearching reference lists) were not described.	Not clear
Was a list of studies (included and excluded) provided?	Included studies were tabulated according to intervention type, and reference numbers were listed in the text. No list of excluded studies. [MC: Note: One RCT (ref. 40; emotion-orientated care) has been mislabelled in the table as ref 39, which is a review of the- same topic]	Not clear
Were the characteristics of the included studies provided?	Summary tables present details of study design, participants (unclear whether these reflect eligible or actual patients), interventions and results. Inconsistent details of control interventions and no details of outcome measures.	Not clear
Overall grade:	**Poor**	

Carrion (2013) [48]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Clear research objectives and eligibility criteria were stated in the review.	Yes
Was a comprehensive literature search performed?	A range of electronic databases (including MEDLINE) was searched in Apr 2010; search strategy/keywords described not the specific search dates. Additional papers were identified by searching the reference lists of retrieved articles.	Yes
Was a list of studies (included and excluded) provided?	Included studies were tabulated; reference numbers were cited for each intervention type. No list of excluded studies.	Not clear
Were the characteristics of the included studies provided?	Tables summarize details of study design, participants, intervention, comparators and outcomes according to intervention type.	Yes
Overall grade:	**Moderate**	

Cheston (2016) [58]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	The protocol was registered in PROSPERO	Yes
Was a comprehensive literature search performed?	Electronic databases (Cinahl Plus, the Cochrane Library, Embase, Medline and PsychInfo) were searched. Additional papers identified by searching the grey literature (including SIGLE and Zetoc), by crosschecking against the reference lists of studies already identified and from studies already known to researchers.	Yes
Was a list of studies (included and excluded) provided?	included studies: yes; excluded: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Farina (2012) [44]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Protocol published	Yes
Was a comprehensive literature search performed?	ALOIS (www.medicine.ox.ac.uk/alois) - the Cochrane Dementia and Cognitive Improvement Group's Specialized Register on 26 June 2012. The studies are identified from: 1. monthly searches of a number of major healthcare databases: MEDLINE, EMBASE, CINAHL, PsycINFO and LILACS; 2. monthly searches of a number of trial registers: ISRCTN; UMIN (Japan's Trial Register); the WHO portal (which covers ClinicalTrials.gov; ISRCTN; the Chinese Clinical Trials Register; the German Clinical Trials Register; the Iranian Registry of Clinical Trials and the Netherlands National Trials Register, plus others); 3. Quarterly searches of The Cochrane Library's Central Register of Controlled Trials (CENTRAL); 4. Six-monthly searches of a number of grey literature sources: ISI Web of Knowledge Conference Proceedings; Index to Theses; Australasian Digital Theses. Additional searches were performed in many of the sources listed above to cover the timeframe from the last searches performed for ALOIS to ensure that the search for the review was as up-to-date and as comprehensive as possible.	Yes
Was a list of studies (included and excluded) provided?	Yes included and excluded studies tables	Yes
Were the characteristics of the included studies provided?	Yes characteristics of Included studies table	Yes
Overall grade:	**High**	

Forbes (2009) [63]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Protocol published	Yes
Was a comprehensive literature search performed?	The Specialized Register of the Cochrane Dementia and Cognitive Improvement Group (CDCIG) was searched on 4 March 2008 for all years up to December 2005. This register contains records from the following major healthcare databases The Cochrane Library, MEDLINE, EMBASE, PsycINFO, CINAHL and LILACS, and many ongoing trial databases and other grey literature sources, including Conference proceedings: ISTP (http://portal.isiknowledge.com/portal.cgi) (Index to Scientific and Technical Proceedings) (to 29 August 2006); INSIDE (BL database of Conference Proceedings and Journals) (to June 2000); and Theses: Index to Theses (formerly ASLIB) (http://www.theses.com/) (UK and Ireland theses) (1716 to 11 August 2006); Australian	Yes

Forbes (2009) [63]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
	Digital Theses Program (http://adt.caul.edu.au/): (last update 24 March 2006); Canadian Theses and Dissertations (http: //www.collectionscanada.ca/thesescanada/index-e.html): 1989 to 28 August 2006); DATAD - Database of African Theses and Dissertations (http:// www.aau.org/datad/backgrd.htm); Dissertation Abstract Online(USA)(http://wwwlib.umi.com/dissertations/gateway) (1861 to 28 August 2006). The Cochrane Library, MEDLINE, EMBASE, PsycINFO, CINAHL and LILACS were searched separately on 4 March 2008 for records added to these databases after December 2005 to January 2008.	
Was a list of studies (included and excluded) provided?	Yes included and excluded studies tables	Yes
Were the characteristics of the included studies provided?	Yes full data extraction tables	Yes
Overall grade:	**High**	

Forbes (2015) [53]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	This is a Cochrane review for which there is a published protocol. Clear research objectives and eligibility criteria were stated in the review.	Yes
Was a comprehensive literature search performed?	Studies were identified by searching the specialized register of the Cochrane Dementia and Cognitive Improvement Group (ALOIS), which includes records from various sources (including MEDLINE and grey literature sources) ; search strategies/keywords provided in the appendices along with the years searched. Additional searches were conducted in many of the sources covered by ALOIS. The last searches were run Oct 2013.	Yes
Was a list of studies (included and excluded) provided?	Separate lists of studies included in and excluded from the review.	Yes
Were the characteristics of the included studies provided?	No summary table of study/participant characteristics aside from ROB; only tables for individual studies presented	Not clear
Overall grade:	**Moderate**	

Forrester (2014) [65]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Protocol published	Yes
Was a comprehensive literature search performed?	ALOIS (www.medicine.ox.ac.uk/alois), the Cochrane Dementia and Cognitive Improvement Group Specialized Register, was searched on 26 November 2012 and 20 January 2014. The studies are identified from: 1. monthly searches of a number of major healthcare databases: MEDLINE, EMBASE, CINAHL, PsycINFO, and LILACS; 2. monthly searches of a number of trial registers: International Standard Randomised Controlled Trial Number (ISRCTN); UMIN (Japan's Trial Register); the World Health Organization (WHO) portal (which covers ClinicalTrials.gov; ISRCTN; the Chinese Clinical Trials Register; the German Clinical Trials Register; the Iranian Registry of Clinical Trials; and the Netherlands National Trials Register; plus others); 3. Quarterly search of the Central Register of Controlled Trials (CENTRAL) in The Cochrane Library; 4. Six-monthly searches of a number of grey literature sources: ISI Web of Knowledge Conference Proceedings; Index to Theses; Australasian Digital Theses. Additional searches were performed in many of the sources listed above to cover the timeframe from the last searches performed for ALOIS to ensure that the search for the review was as up-to-date and as comprehensive as possible. For the previous version of this review, experts in the field of complementary therapies were contacted to identify ongoing and unpublished research, as well as the Aromatherapy Organisations Council.	Yes
Was a list of studies (included and excluded) provided?	Yes included and excluded studies tables	Yes
Were the characteristics of the included studies provided?	Yes included studies data extraction tables	Yes
Overall grade:	**High**	

Fritz (2015) [64]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Not stated explicitly	Not clear
Was a comprehensive literature search performed?	Biosis, CINAHL, Cochrane, ERIC, PsychInfo, EBSCO Psychological & Behavioral, PubMed, Scopus, and Web of Knowledge. All databases were searched from their inception until January 19, 2014. Additionally, the reference lists of retrieved articles were searched for potential studies that may have been overlooked or absent from databases	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear

Fritz (2015) [64]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Groot (2016) [54]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Clear research objectives and eligibility criteria were stated in the review.	Yes
Was a comprehensive literature search performed?	Pubmed/MEDLINE, Web of knowledge/science, Science Direct and ALOIS databases were searched for studies published Jan 1960-May 2015; search strategy/keywords provided.	Yes
Was a list of studies (included and excluded) provided?	Included studies listed within the text. No list of excluded studies.	Not clear
Were the characteristics of the included studies provided?	Summary tables report details of participants, interventions, controls and outcomes; more comprehensive details of interventions and risk of bias assessments in supplementary tables.	Yes
Overall grade:	**Moderate**	

Han (2016) [66]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	The PRISMA Statement Explanation and Elaboration document was used as a general guide for conducting and reporting a quality systematic review. Protocol not specifically reported.	Not clear
Was a comprehensive literature search performed?	Three electronic databases (PubMed, CINAHL, and PsycINFO) for peer-reviewed journal articles published in English until January 2014. Reference list checking (searching reference lists of identified articles and systematic reviews) and related-articles features in databases.	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Hsu (2015) [67]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Not stated explicitly. The inclusion criteria were broad.	Not clear
Was a comprehensive literature search performed?	PubMed and Web of Science were searched; some search terms were reported. In addition, the references lists of retrieved articles and relevant reviews were handsearched. Studies published from Jan 1990-Nov 2014 were included	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Huang (2015) [59]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Pre-specified protocol	Yes
Was a comprehensive literature search performed?	The following databases were searched from inception to December 31, 2014: Medline, PubMed, CINAL, the Cochrane Central Register of Controlled Trials, ProQuest, PsycINFO, and Google Scholar, Wanfang data, Chinese Electronic Periodical Services, China Integrated Knowledge Resources Database, and National Central Library. The reference lists of the identified studies were checked.	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Huntley (2015) [51]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Clear research objectives and eligibility criteria were stated in the review. The authors refer to the provision of a PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Statement) checklist, but this does not appear to have been included in the online supplementary files.	Yes
Was a comprehensive literature search performed?	Online literature databases (including Web of Knowledge, Cochrane Collaborative Central Register of Controlled Trials, and PubMed/MEDLINE) and trial registers were searched in June 2013, along with previous meta-analyses and systematic reviews of cognitive interventions in dementia, and leading journals. Search terms were provided but not specific search dates.	Yes
Was a list of studies (included and excluded) provided?	Range of reference numbers provided for included studies. No list of excluded studies	Not clear
Were the characteristics of the included studies provided?	Supplemental tables report limited details of participants and interventions included in the meta-analyses, but do report quality ratings	Not clear
Overall grade:	**Moderate**	

Kiepe (2012) [55]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Clear research objectives and inclusion criteria were stated in the review.	Yes
Was a comprehensive literature search performed?	MEDLINE and PsycINFO were searched from Jan 1995-Mar 2011; search terms were not provided. In addition, reference lists of included articles and art therapy journals were handsearched, and dance therapists and professional organizations were contacted for supplementary and unpublished studies.	Not clear
Was a list of studies (included and excluded) provided?	Included studies were tabulated. No list of excluded studies.	Not clear
Were the characteristics of the included studies provided?	Summary table reported details of the participants, interventions, comparators, and results for each outcome measure.	Yes
Overall grade:	**Moderate**	

Lee (2009) [68]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	There was a protocol but unclear if published	Not clear
Was a comprehensive literature search performed?	The following electronic databases were searched from inception up to August 2008: Medline, AMED, British Nursing Index, CINAHL, EMBASE, PsycInfo, The Cochrane Library 2008 (Issue 3), six Korean Medical Databases (Korean Studies Information, DBPIA, Korea Institute of Science and Technology Information, Research Information Centre for Health Database, Korea Med and Korean National Assembly Library), four Chinese Medical Databases (China Academic Journal, Century Journal Project, China Doctor/Master Dissertation Full Text DB and China Proceedings Conference Full Text DB) and three Japanese Medical Databases. Manual searches of authors' departmental files and relevant journals [(Focus on Alternative and Complementary Therapies) and Forschende Komplementa ¨rmedizin und Klassische Naturheilkunde (Research in Complementary and Classical Natural Medicine) up to August 2008]. The references in all located articles were searched manually for further relevant articles.	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Lee (2009) [46]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	The research objective is stated clearly and inclusion criteria relate to study design, population and intervention.	Yes
Was a comprehensive literature search performed?	Databases were searched up to January 2009: Medline, AMED, CINAHL, EMBASE, PsycInfo, The Cochrane Library 2009 (Issue1), six Korean Medical Databases (Korean Studies Information, DBPIA, Korea Institute of Science and Technology Information, KERIS, KoreaMed, and Korean National Assembly Library), four Chinese Medical Databases (China Academic Journal, Century Journal Project, China Doctor/Master Dissertation Full Text DB, and China ProceedingsConferenceFull Text DB), and Japan Science and Technology Information Aggregator, Electronic. Also manually searched authors' departmental files and relevant journals [FACT (Focus on Alternative and Complementary Therapies) andForschendeKomplement¨armedizinundKlassische	Yes

Lee (2009) [46]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
	Naturheilkunde(ResearchinComplementaryandClassical Natural Medicine) up to January 2009]. The references in all located articles were searched manually for further relevant articles.	
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Leung (2015) [60]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Not stated explicitly	Not clear
Was a comprehensive literature search performed?	Searches were carried out in MEDLINE, Embase, Pubmed, PsycINFO, Scopus and The Cochrane Library. Searched identified citations for additional trials and contacted corresponding authors of identified trials for additional references and unpublished data. Scanned the reference lists of identified publications, and all review papers that were related to social support group interventions in dementia.	Yes
Was a list of studies (included and excluded) provided?	included and excluded studies tables	Yes
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Li (2014) [42]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Not stated explicitly	Not clear
Was a comprehensive literature search performed?	Systematic literature search in PubMed, EMBASE, International Pharmaceutical Abstracts, clinicaltrials.gov, the Cochrane Controlled Trials Register, the Cochrane Database of Systematic Reviews, and the Cochrane Cognitive Improvement Group specialized registry. Additional studies were sought from neurology and vitamin research experts and from reference lists of selected articles, review articles, and meta-analyses. MESH terms provided	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies tables	Yes
Overall grade:	**Moderate**	

Mestre (2009) [45]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Protocol published	Yes
Was a comprehensive literature search performed?	The Cochrane Controlled Trials Register, Medline, EMBASE and Clinical Trials Database of the United States National Institute of Health were searched until December 2007.	Yes
Was a list of studies (included and excluded) provided?	Yes included and excluded studies tables	Yes
Were the characteristics of the included studies provided?	Yes characteristics of Included studies table	Yes
Overall grade:	**High**	

Miroddi (2014) [41]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Not stated explicitly	Not clear
Was a comprehensive literature search performed?	Cochrane Library, Embase, Google Scholar, Pubmed, Scopus, SciFinder, and Web of Science.	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Ojagbemi (2016) [57]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Stated that this review followed conventional recommendations for the methodology and reporting of systematic reviews	Not clear
Was a comprehensive literature search performed?	Cochrane Database, MEDLINE, EMBASE, PsycINFO, and Cumulative Index to Nursing and Allied Health Literature were searched for relevant citations, and PubMed was searched for in-process articles. Additional searches of the reference lists of retrieved articles were undertaken	Yes
Was a list of studies (included and excluded) provided?	Included studies yes; excluded no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Onakpoya (2015) [40]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Not stated explicitly	Not clear
Was a comprehensive literature search performed?	Electronic searches were conducted in the following databases: Medline, Embase, PsychInfo, CINAHL, and the Cochrane Library. Each database was searched from inception up till May, 2015. Search terms used included dementia, Alzheimers dementia, AD, Souvenaid, fortasyn, cognitive function, cognitive impairment, and derivatives of these. No age, language, or time restrictions were imposed. The authors also searched Google Scholar for relevant Internet proceedings, and handsearched the bibliography of retrieved articles. Where necessary, they contacted authors of published clinical trials for additional data.	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Spector (2012) [50]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Clear research objective and inclusion criteria were stated in the review.	Yes
Was a comprehensive literature search performed?	Studies were identified by searching the specialized register of the Cochrane Dementia and Cognitive Improvement Group, which includes records from various sources (including MEDLINE) and searching PsycINFO; search terms were provided. No start date was used in order to maximise studies retrieved, and end date (or when search conducted) was not stated. No additional means of identifying studies were reported.	Not clear
Was a list of studies (included and excluded) provided?	Included studies were tabulated. No list of excluded studies.	Not clear
Were the characteristics of the included studies provided?	Summary tables present details of study quality, participants, interventions, controls and outcomes, according to intervention type. Participant characteristics are limited (only diagnosis reported).	Not clear
Overall grade:	**Poor**	

Ueda (2013) [69]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Not stated explicitly	Not clear
Was a comprehensive literature search performed?	MEDLINE, CINAHL, PsycINFO, Igaku Chuo Zasshi, hand searches of previous systematic reviews	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

Wayne (2014) [56]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Clear research question and eligibility criteria were stated in the review.	Yes
Was a comprehensive literature search performed?	A range of databases (including MEDLINE) was searched from inception through Mar 2013; search terms were provided. Retrieved articles were handsearched for further references.	Yes
Was a list of studies (included and excluded) provided?	Included studies were tabulated according to degree of cognitive impairment (with/without). No list of excluded studies.	Not clear
Were the characteristics of the included studies provided?	Summary table reported details of the studies, participants, interventions, comparators and outcome measure.	Yes
Overall grade:	**Moderate**	

Woods (2012) [49]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	This is a Cochrane review for which there is a published protocol. Clear research objectives and eligibility criteria were stated in the review.	Yes
Was a comprehensive literature search performed?	Studies were identified by searching the specialized register of the Cochrane Dementia and Cognitive Improvement Group (ALOIS), which includes records from various sources (including MEDLINE and grey literature sources); search dates and strategies/keywords provided in the appendices. Additional searches were conducted in each of the sources covered by ALOIS. The last searches were run Dec 2011	Yes
Was a list of studies (included and excluded) provided?	Separate lists of studies included in and excluded from the review.	Yes
Were the characteristics of the included studies provided?	No summary table of study/participant characteristics; only tables describing individual studies presented	No
Overall grade:	**Moderate**	

Yang (2013) [43]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Protocol registered in PROSPERO	Yes
Was a comprehensive literature search performed?	PubMed, Cochrane Library, and four major Chinese electronic databases from their inception to June 2013. Also searched for ongoing trials from mainstream registries, searched unpublished postgraduate theses in Chinese databases and the reference lists of all relevant papers found electronically were hand-searched.	Yes
Was a list of studies (included and excluded) provided?	Included studies yes; excluded no	Not clear
Were the characteristics of the included studies provided?	Yes characteristics of Included studies table in supplementary file	Yes
Overall grade:	**Moderate**	

Yang (2016) [6]		
Question	**How is the question addressed in the review?**	**AMSTAR Grade achieved**
Was an 'a priori' design provided?	Data were extracted using a pre-defined form; other aspects of protocol not reported	Not clear
Was a comprehensive literature search performed?	Electronic search was conducted from PubMed, Cochrane Library, and four major Chinese databases from their inception up to 1st December, 2014	Yes
Was a list of studies (included and excluded) provided?	Included studies: yes; excluded studies: no	Not clear
Were the characteristics of the included studies provided?	Included studies table	Yes
Overall grade:	**Moderate**	

APPENDIX B: Interventions, Outcomes and Conclusions of Eligible Reviews

Table B.1: Interventions, Outcomes and Conclusions of Eligible Reviews (33)

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
Nutritional supplements (including vitamins, gingko biloba)					
Abdelhamid [38]	Aimed to modify food and/or drink, provide food- or drink-based supplements, assist with eating or drinking or manage swallowing problems (pharmacological and pill-based supplements were excluded).	RCTs of oral nutrition supplement (ONS): no clear effects on cognitive status. One RCT tested effects of 11 weeks of ONS, management of swallowing problems with soft pureed gratin diet, oral care and exercise vs usual care in 121 Danish dementia nursing home residents, finding no effect on cognitive ability. One RCT of three months meal replacement with lyophilised (freezedried) foods and advice to residents and carers vs. advice alone was investigated in 53 people with severe cognitive impairment and found no effect on cognition.	RCTs of oral nutrition supplement: no clear effects on functional status. One RCT tested effects of 11 weeks of ONS, management of swallowing problems with soft pureed gratin diet, oral care and exercise vs usual care in 121 Danish dementia nursing home residents, finding no effect on function.	RCTs of oral nutrition supplement: no clear effects on quality of life	No definitive evidence on effectiveness, or lack of effectiveness, of specific interventions but studies were small and short term. People with cognitive impairment and their carers have to tackle eating problems despite this lack of evidence, so promising interventions are listed. The need remains for high quality trials tailored for people with cognitive impairment assessing robust outcomes.
Burckhardt [39]	1) Omega-3 PUFA capsules as a dietary supplement 2) Diets enriched with omega-3 PUFA (0 studies found)	Mini-Mental State Examination (MMSE) and AD Assessment Scale - Cognitive subscale (ADAS-Cog): individual studies showed 6 months of supplements had no effect on cognition; improved cognitively	AD Cooperative Study - Activities of Daily Living (ADCS-ADL) and Disability Assessment for Dementia (DAD): 6 months' supplements had no effect on everyday functioning. Meta-analysis found no	Quality of Life AD scale (QoL-AD): 6 months' supplements had no effect on QoL.	Altogether, the quality of the evidence was moderate or high for most of the effects measured, but found no evidence for either benefit or harm from omega-3 PUFA supplements in people

Review	**Intervention**	**Key results (cognitive functioning)**	**Key results (functional ability)**	**Key results (**wellbeing**/quality of life)**	**Authors' conclusions of review**
		complex daily activities (e.g. shopping), with longer-term supplements (1 small study). Meta-analysis showed no effect on cognition (MMSE).	difference vs placebo in functional measures.		with mild to moderate Alzheimer's disease. The effects on people with other types of dementia remain unclear.
Farina [44]	Vitamin E	RCTs: Patients whose oxidative stress markers were lowered by vitamin E showed no significant difference in the percentage change in Mini-Mental State Examination (MMSE) score, between baseline and six months, compared to the placebo group.	Not reported	Not reported	No convincing evidence that vitamin E is of benefit in the treatment of AD
Lee [46]	Ginseng: low dose (4.5 g/day) or high dose (9.0 g/day), plus conventional therapy	RCTs: significant effect in favour of ginseng on the MiniMental Status Examination (n = 174, weight mean difference (WMD), 1.85; 95% confidence intervals, CIs 0.88 to 2.82, p = 0.0002) and on the Alzheimer's Disease Assessment Scale (ADAS)-cognitive (n = 174, WMD, 3.09; 95% CIs 1.08 to 5.09, p = 0.003).	RCTs: not reported	RCTs: not reported	The evidence for ginseng as a treatment of AD is scarce and inconclusive.

Review	**Intervention**	**Key results (cognitive functioning)**	**Key results (functional ability)**	**Key results (**wellbeing**/quality of life)**	**Authors' conclusions of review**
Li [42]	Vitamin B supplementation (including folate)	RCTs: No significant cognitive benefits on the Alzheimer's Disease Assessment Scale (ADAS-cog) (WMD 1.01, 95% CI -0.68, 2.70) and Mini Mental State Examination (MMSE) (WMD -0.22, 95% CI -1.00, 0.57).	RCTs: no significant functional change (SMD 0.13, 95% CI -0.05, 0.31)	Not reported	Folic acid alone or vitamins B in combination are unable to stabilize or slow decline in cognition, function, behaviour, and global change of AD patients.
Mestre [45]	Coenzyme Q10, Vitamin E, Creatine	RCT of vitamin E: cognitive function as measured by the Mini-Mental Status Examination (MMSE) score: 1.2 ± 3.5 treatment group vs. 0.0 ± 2.6 placebo group; p = 0.1. RCT of creatine: no significant difference. RCT of coenzyme Q10: no significant difference.	RCT of vitamin E: motor evaluation as measured by the Quantified Neurological Examination (QNE): -2.9 ±11.8 treatment group vs. -2.3± 7.5 placebo group; p =0.78. RCT of creatine: no significant difference. RCT of coenzyme Q10: no significant difference.	RCT of vitamin E: Quality of life as measured by the ADL scale of the Baltimore HD project: -2.2 ± 7.3 treatment group vs. -1.1 ± 7.6 placebo group; p = 0.55. RCT of creatine: not reported. RCT of coenzyme Q10: not reported.	None of the interventions proved to be effective as a disease-modifying therapy for HD. Further trials with greater methodological quality should be conducted using more sensitive biological markers. Pre-symptomatic mutation carriers should be included in future studies.
Miroddi [41]	Salvia officinalis L. and Salvia lavandulaefolia L.	RCT: Patients who received S. officinalis experienced significant benefits in cognitive function by the end of the treatment, as indicated by improved scores in the Clinical Dementia Rating and the Alzheimer's Disease Assessment Scale	RCT: Not reported	RCT: Not reported	S. officinalis and S. lavandulaefolia exert beneficial effects by enhancing cognitive performance in patients with dementia and is safe for this indication

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
Onakpoya [40]	Souvenaid is a complex of omega-3 fatty acids (eicosapentaenoic and docosahexaenoic acids), the nucleotide uridine monophosphate, phospholipids, B complex vitamins (pyridoxine, cyanocobalamin, and folate), choline, vitamin E, and the micronutrient, selenium	RCTs: Non-significant differences in cognition (ADAS-cog scores MD: 0.08, 95% CI: −0.71 to 0.88)	RCTs: Non-significant differences in function (ADCS-ADL scores MD: 0.36, 95% CI: −0.54 to 1.25)	RCTs: No significant difference in QOL scores	The evidence from published clinical trials does not show that supplementation with Souvenaid has beneficial effects on functional ability, behaviour, or global clinical change. Souvenaid may cause improvements in verbal recall in patients at early stages of AD. Few RCTs examining the effect of Souvenaid have been conducted, and they are all funded by same manufacturer. Future research should include using unified tools to measure cognition, function, and behaviour in AD.
Yang [6]	Ginkgo biloba	RCTs: Compared with conventional medicine alone, Ginkgo biloba in combination with conventional medicine was superior in improving Mini-Mental State Examination (MMSE) scores at 24 weeks for patients with Alzheimer's disease (MD 2.39, 95% CI 1.28 to 3.50, P<0.0001). When compared with	RCTs: Compared with conventional medicine alone, Ginkgo biloba in combination with conventional medicine was superior in improving Activity of Daily Living (ADL) scores at 24 weeks for Alzheimer's disease (MD -3.72, 95% CI -5.68 to -1.76, p = 0.0002). When compared with placebo or conventional	RCT: One trial reported Ginkgo biloba for AD was superior to placebo as measured by the quality of life questionnaire for person with dementia (DEMQOL)-proxy quality of life scale.	Ginkgo biloba is potentially beneficial for the improvement of cognitive function, activities of daily living, and global clinical assessment in patients with Alzheimer's disease.

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
		placebo or conventional medicine in individual trials, Ginkgo biloba demonstrated similar but inconsistent findings.	medicine in individual trials, Ginkgo biloba demonstrated similar but inconsistent findings.		
Yang [43]	Huperzine A	RCTs: Compared with placebo, Huperzine A showed a significant beneficial effect on the improvement of cognitive function as measured by Mini-Mental State Examination (MMSE) at 8 weeks, 12 weeks and 16 weeks, and by Hastgawa Dementia Scale (HDS) and Wechsler Memory Scale (WMS) at 8 weeks and 12 weeks. One trial demonstrated no significant change in cognitive function as measured by Alzheimer's disease Assessment Scale-Cognitive Subscale (ADAS-Cog) in Huperzine A group. Trials comparing Huperzine A with no treatment, psychotherapy and conventional medicine demonstrated similar findings.	RCTs: Activities of daily living favoured Huperzine A as measured by Activities of Daily Living Scale (ADL) at 6 weeks, 12 weeks and 16 weeks. One trial demonstrated no significant change in activity of daily living as measured by Alzheimer's disease Cooperative Study Activities of Daily Living Inventory (ADCS-ADL) in Huperzine A group. Trials comparing Huperzine A with no treatment, psychotherapy and conventional medicine demonstrated similar findings.	RCTs: not reported	Huperzine A appears to have beneficial effects on improvement of cognitive function, daily living activity, and global clinical assessment in participants with Alzheimer's disease. However, the findings should be interpreted with caution due to the poor methodological quality of the included trials.
Cognitive rehabilitation					
Bahar-Fuchs [47]	Cognitive training (CT) (n=11): group or individual	RCTs: CT (n=11): no evidence	RCTs: CT (n=11): no evidence	RCTs: Not measured CR (n=1): A trend	Available evidence regarding cognitive

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
	sessions (5-72 sessions of 45-60 min duration) of guided practice on a set of standardised tasks designed to reflect particular cognitive functions such as memory, attention, reading, concentration, perceptual ability, problem-solving; some involved computerised training and some also combined CT with acetylcholinesterase-inhibiting medication. Cognitive rehabilitation (CR) (n=1): eight weekly individualised CR sessions focusing on patient-derived personal goals, supported by components aimed at improving everyday functioning (e.g. practical aids and strategies).	for the efficacy of CT in improving cognitive functioning. Mean change in a global measure of cognition in the intervention groups was 0.10 higher (-0.21 lower to 0.40 higher) than the control (6 RCTs). CR (n=1): Change in global measure of cognition not measured. Participants were more satisfied with their memory performance six months after the intervention compared with the control group.	for the efficacy of CT in activities of daily living. Mean change in participant's capacity for ADL (caregiver reported) in the intervention groups was 0 standard deviations higher (0.38 lower to 0.38 higher) than the control. CR (n=1): Potential benefit of individual CR. Mean change in participant's capacity for ADL (COPM Performance, self-reported) in the intervention groups was 1.22 higher (0.09 to 2.35 higher)	approaching significance suggested that six months after the intervention, participants in the cognitive rehabilitation group rated their overall quality of life as higher than that of participants in the control condition.	training remains limited, and the quality of the evidence needs to improve. However, there is still no indication of any significant benefit derived from cognitive training. Trial reports indicate that some gains resulting from intervention may not be captured adequately by available standardised outcome measures. The results of the single RCT of cognitive rehabilitation show promise but are preliminary in nature. Further, well-designed studies of cognitive training and cognitive rehabilitation are required to obtain more definitive evidence. Researchers should describe and classify their interventions appropriately using available terminology
Carrion [48]	Cognition-orientated approaches: Reality orientation (RO) (n=9): therapy sessions involving repeated	RCTs: RO (n=9): all trials found better cognitive function in the intervention groups compared to the control	RCTs: RO: One RCT measuring functional status or activities of daily living using the Barthel Index	RCTs: RO: One RCT that measured quality of life (QOL-AD) found a significant benefit of a	Stimulation of cognitive functions, especially by means of reality orientation, improve overall cognitive

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
	presentation of information to each patient, with/without other cognitive exercises. Typically 2-5 times a week, 30-60 min/session. Skills training (ST) (n=8): training programmes involving exercises to match/categorise objects, exercises to perform basic daily activities, or software to aid memory/perception. Typically 1-5 times a week, 30-60 min/session, up to 2.5 h/session 5 times per week.	groups. Only 6 trials found a statistically significant improvement ST (n=8): positive effects were shown in most trials, but only 2 trials achieved a statistically significant improvement. Patients showed modest improvement in tasks in which they were trained, but this did not persist when the training intervention ended.	and IADL found no significant difference between the intervention or control groups. ST: one RCT that measured functional scales (IADL, BADL) and three RCTs that measured ADL found a non-significant change.	mixture of RO and other cognitive stimulation exercises in comparison with normal activities (change from baseline: +1.3 vs -0.8, p = 0.028). One cross-over study found no significant difference in the Life Satisfaction Index when comparing RO and reminiscence therapy with no treatment.	function in patients suffering from dementia. Higher-quality trials are warranted in order to confirm these findings. Multicentre and large-sample trials may improve evidence regarding the effects of cognitive interventions on patients suffering from dementia.
Huntley [51]	Cognitive interventions categorised as: Cognitive stimulation (CS) (n=21): range of social and cognitive activities to stimulate multiple cognitive domains; Cognitive training (CT) (n=4): repeated practice of standardised tasks targeting a specific cognitive function; Cognitive rehabilitation (CR) (n=0),: person-centred approach to target impaired function; Mixed CT and stimulation (MCTS) (n=7). Separate CS and MCTS interventions (n=1).	RCTs: MMSE post intervention CS: significant pooled effect size of 0.51 (95% CI 0.35 to 0.66, p<0.001) vs non-active controls (n=17) and 0.35 (95% CI 0.06 to 0.64; p = 0.019) vs active controls (n=3). CT: meta-analysis not possible for CT vs non-active control (n=1); non-significant effect vs active control (p = 0.658) MCTS: non-significant effect vs active (p = 0.251) and non-active (p = 0.388) controls. RCTs: ADAS-Cog post-	Not measured	Not measured	CS improves scores on MMSE and ADASCog in dementia, but benefits on the ADAS-Cog are generally not clinically significant and difficulties with blinding of patients and use of adequate placebo controls make comparison with the results of dementia drug treatments problematic.

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
	Group or individual sessions, Typically 1- 2 hours/session, 2-6 times a week.	intervention CS: significant pooled effect size of −0.26 (n=9; 95% CI −0.44 to −0.08, p = 0.005) vs non-active control; no studies vs active control. CT and MCTS: no studies using ADAS-Cog outcome measure.			
Spector [50]	Cognitive training (CT) (n=11): various, e.g. training or computerized exercises targeting attention, reading, concentration, memory, language, perception and spacial cognition; spaced retrieval; face-to-face associations; functional tasks; and memory, problem-solving and conversation-related activities. Typically 45-60 min sessions, 1-6 times/week. 5 studies combined CT with acetylcholinesterase inhibitors (ChEIs). Cognitive stimulation (CS) (n=7): Various activities and exercises targeting cognition, reality orientation, social and psychomotor activities,	CT: It was not possible to conclude which (if any) domains are most amenable to change. General cognitive function (n=8): 3 studies found some evidence for enhancement of general cognitive function on the MMSE with CT; no significant differences in remaining studies. Other outcomes relating to learning, memory, attention, language and executive function also showed no consistent effects. CS: There was good evidence for general cognitive enhancement. General cognitive function (n=7): 6 studies found significant positive effects with CT compared with controls on at least one	Not measured	Not measured	This review does not specifically indicate which aspects of cognitive performance are most likely to improve following cognitive stimulation or cognitive training. Nonetheless, there is strong evidence to support the widespread clinical use of cognitive stimulation. Further in-depth trials are needed to determine neuropsychological processes more clearly.

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
	themed sessions; interactive computer sessions. Sessions typically up to 1 hr, 2-3 times/week. 4 studies combined CS with ChEIs. Cognitive rehabilitation: no studies identified.	measure of general cognitive functioning (MMSE, ADAS-Cog, Kingston Dementia Rating Scale). No significant effects were observed for other outcomes in the few trials that measured them.			
Woods [49]	Various interventions targeting cognitive and social functioning on an individual basis or within groups; e.g. discussion; attention, memory and visuospatial exercises or aids; reality orientation activities, groups, sessions or classes; TV followed by discussion questions. In 5 studies the participants were also prescribed acetylcholinesterase inhibitors (AChEI). Sessions lasted 30-90 min and were given 1-5 times/week.	RCTs: Cognitive stimulation was associated with a clear, consistent benefit on cognitive function compared with no treatment or placebo (n=14); most studies used more than one measure of cognitive function. The overall effect size (standardised mean difference, SMD) was 0.41, 95% CI 0.25 to 0.57; p<0.00001). This improvement remained evident at follow-up one to three months after the end of treatment. Meta-analysis also conducted for individual outcome measures.	RCTs: A meta-analysis focused on activities of daily living and basic self-care skills found no benefit of cognitive stimulation (n=4).	RCTs: Cognitive stimulation was associated with a significant benefit to the combined outcome of self-reported quality of life and wellbeing compared with no treatment (n=4; SMD 0.38, 95% CI: 0.11, 0.65; p = 0.006).	There was consistent evidence from multiple trials that cognitive stimulation programmes benefit cognition in people with mild to moderate dementia over and above any medication effects. However, the trials were of variable quality with small sample sizes and only limited details of the randomisation method were apparent in a number of the trials. Other outcomes need more exploration but improvements in self-reported quality of life and wellbeing were promising. Further research should look into the potential benefits of longer term cognitive stimulation

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
					programmes and their clinical significance.
Exercise					
Brett [52]	Physical exercise completed: Multimodal (n = 6): combination of different exercises targeting strength, balance, flexibility, aerobic capacity, cognition, functional ability, and/or coordination. Walking (n = 5): supervised indoor walking session; 4 individual sessions and one a group session completed in pairs. Music and movement (n = 2): focus on music with general movement of arms and legs. Hand exercises (n = 1).	RCTs: There were significant improvements on the MMSE with music/movement (n=1) and walking (n=1) activities, and over time for a multimodal intervention compared with control in the Nurses' Observation Scale for Geriatric Patients (total score and memory subscale) (n=1) and the French Rapid Evaluation of Cognitive Function test (n=1). A further study showed that despite a global decline in cognition (using the Brief Cognitive Screening Battery) in the 2 multimodal groups and the control group, the decline in the multidisciplinary team-led group declined at a significantly slower rate in the Clock Drawing Test and Verbal Fluency Test components than controls. P-values were not reported. No significant changes were observed in studies	RCTs: Measures of functional ability varied widely across studies (n=5). Ability to complete ADLs (n=4): Two studies showed improvements in the Barthel Index with a multimodal intervention (not significant) and walking (significant); one study showed significant improvement in ability to transfer from 1 surface to another in the multimodal group using the Acute Care Index Function measure, but reduced ability in the walking and control groups; one study found a deterioration in functional ability in both the multimodal and control groups, as indicated by a significantly reduced Katz Index of ADLs score, although the rate of decline was significantly slower in the multimodal group; P-values were not reported. There were no significant findings in relation to	RCTs: 75% or more of the studies that used mood, depression or agitation outcome measures showed a positive effect in at least 1 outcome measure	There is emerging evidence that physical exercise significantly benefits individuals living with a dementia in nursing homes. Higher quality research is required adopting more rigorous methods, including longer interventions and larger samples to determine optimum parameters of the physical exercise interventions evaluated.

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
		using other measures of cognition.	physical disability (n=1) or care time (n=1).		
Forbes [53]	Activities such as aerobic, strength and balance exercise programmes, walking, and interactive games. Sessions typically lasted 20-75 min and were delivered 2-5 times/week.	RCTs: The studies used different measures of cognitive function. There was no clear evidence of benefit from exercise on cognitive functioning: the estimated standardised mean difference (SMD) between exercise and control groups was 0.43 (95% CI -0.05 to 0.92, p = 0.08) (n=9). Heterogeneity was very substantial.	RCTs: The studies used different instruments to measure activities of daily living (ADL). There was some benefit of exercise on the ability of people with dementia to perform ADL: the estimated SMD between exercise and control groups was 0.68 (95% CI 0.08 to 1.27, p= 0.02) (n=6). Considerable heterogeneity was found.	Not measured	There is promising evidence that exercise programmes may improve the ability to perform ADLs in people with dementia, although some caution is advised in interpreting these findings. The review revealed no evidence of benefit from exercise on cognition, neuropsychiatric symptoms, or depression. There was little or no evidence regarding the remaining outcomes of interest (i.e., mortality, caregiver burden, caregiver quality of life, caregiver mortality, and use of healthcare services).
Groot [54]	Physical activity interventions; one study included two intervention groups. Aerobic exercise (n=7), typically walking-based. Non-aerobic exercise (n=5), such as various exercises, tai chi, and	RCTs: Positive overall random effect of physical activity interventions on cognitive function compared with the control group; the standardised mean difference (SMD) was 0.42 (95% CI: 0.23, 0.62;	RCTs: Activities of daily living: Positive overall random effect of physical activity interventions compared with the control group (SMD 1.18, 95% CI: 0.57, 1.79; p<0.01) (4 studies).	Not measured	This meta-analysis suggests that physical activity interventions positively influence cognitive function in all patients with dementia. This beneficial effect was independent of the

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
	dance/movement programmes. Combined aerobic and non-aerobic exercise (n=7) comprising combinations of walking, treadmill, cycling and exercises targeting strength, movement, balance and flexibility.	p<0.01) (16 studies). Positive effects also found for combined exercise (SMD 0.59, 95% CI: 0.32, 0.86; p<0.01 (6 studies) and aerobic-only exercise (SMD 0.41, 95% CI: 0.05, 0.76; p<0.05) (6 studies). Physical activity interventions were equally beneficial in patients with AD (SMD 0.38, 95% CI: 0.09, 0.66; p <0 .01) (6 studies).			clinical diagnosis and the frequency of the interventions, and was driven by interventions that included aerobic exercise.
Kiepe [55]	Dementia (n=1): dance (movement) therapy, 9 sessions of 30-45 min) in 2 months). PD (n=2): Ballroom dancing, 20 sessions of 1 hr in 3 months.	RCTs: Dementia (n=1): Participants receiving dance (movement) therapy showed some improvement in cognition compared with the control group, based on the MMSE, Clock Drawing Test and Picture Description Test.	RCTs: PD (n=2): Compared with the control group, ballroom dances such as tango and waltz improved balance and coordination in patients, as assessed by the Berg Balance Scale (n=1) and 6-minute walk test (n=1).	RCTs: PD (n=1): The tango group showed greatest improvement on the PDQ-39.	Ballroom dances improved balance and coordination in patients with Parkinson's disease and disease-specific quality of life in patients with heart failure. Dance (movement) therapy and ballroom dances seem beneficial for patients with breast cancer, depression, Parkinson's disease, diabetes and heart failure. However, further good quality research is needed to gain more profound

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
					insight into the efficacy of these treatment options.
Wayne [56]	In RCTs of adults with cognitive decline: Tai chi of various styles/forms (n=6); Tai chi plus CBT or social support (n=1); Mahjong (n=1). Tai chi sessions were typically 20 to 60 minute in duration, 1 to 4 times/week	All RCTs in cognitively impaired adults (n=7): there were small but significant effects of tai chi compared with non-intervention controls on the MMSE (Hedges' g = 0.35; p = 0.004) and other active interventions (Hedges' g = 0.30; p = 0.002).	Not measured	Not measured	Tai chi shows potential to enhance cognitive function in older adults, particularly in the realm of executive functioning and in individuals without significant impairment. Larger and methodologically sound trials with longer follow-up periods are needed before more-definitive conclusions can be drawn.
Occupational therapy					
Ojagbemi [57]	Occupational therapy (varying types and frequency)	RCTs: not reported	RCTs: not reported	RCTs: There was no significant difference in the QoL of participants receiving OT interventions compared with controls in five of the eight trials considered, and a difference favouring OT in the remaining 3 studies. The overall effect of active intervention on QoL in the studies showed that OT interventions had a small and non-significant effect on QoL	The evidence from the present review does not support the specific use of OT interventions for the improvement of QoL in PwD under pragmatic clinical conditions at this time. They may be best used as part of a comprehensive range of interventions for PwD. Recommendations are made for future design of OT interventions focusing on the

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
				compared with control (SMD = 0.33, 95% CI = −0.08 to +0.74, overall effect size = 1.60, p = 0.11).	improvement of QoL, which is central to the wellbeing of PwD.
Psychotherapy					
Cheston [58]	Individual and group psychotherapy: group or individual psychotherapeutic interventions for people with dementia that meet the definition provided by the British Association of Counselling and Psychotherapy (BACP). Thus, in order for psychotherapeutic interventions to be included, the intervention must: focus on "talking about life events, feelings, emotions, relationships, ways of thinking and patterns of behaviour"; occur regularly at specific times and within a specific context and aim to help individuals to understand themselves and their illness, to promote effective change of thinking or behaviour or otherwise to enhance the person's wellbeing.	RCTs: **CBT**: not reported. **Person-centred counselling**: One Level I study showed a significant increase in MMSE scores at 6 months from average of 16 (SD=4) at baseline to 18 at 6 months (SD=5; p<0.01) and 19 (SD=5; p<0.01) at 12 months; MMSE decreased in the control group. **Psychodynamic interpersonal therapy**: One Level I study found no significant differences on their main outcome measures, including cognition (MMSE). **Validation therapy** (VT): Two level I studies tested VT which incorporates a range of recognised psychotherapy and counselling techniques including empathic listening; the results from	RCTs: **CBT:** The only adequately powered Level I CBT study showed no difference in ADL. **Person-centred counselling**: One Level I study showed no significant effect on Barthel index. **Psychodynamic interpersonal therapy:** One Level I study found no significant differences on their main outcome measures, including activities of daily living. **Validation therapy** (VT): Two level I studies tested VT which incorporates a range of recognised psychotherapy and counselling techniques including empathic listening; the results from both studies were inconclusive.	RCTs: **CBT:** The only adequately powered Level I CBT study showed ratings of quality of life made by people affected by dementia (but not by carers) improved in the intervention group. **Person-centred counselling**: One level I study found that, at 12 months, participants in the treatment arm had improved quality of life (proxy-rated QoL-AD) of 2.14 (0.83 to 3.45; p = 0.0013). **Psychodynamic interpersonal therapy**: not reported. **Validation therapy**: not reported. **Generic group psychotherapy:** Two level I studies were	This study was limited to only those studies published in English. The strongest evidence supported the use of short-term group therapy after diagnosis and an intensive, multi-faceted intervention for Nursing Home residents. Many areas of psychotherapy need further research.

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
		both studies were inconclusive. **Generic group psychotherapy:** not reported. **Multi-component interventions:** not reported	**Generic group psychotherapy**: not reported. **Multi-component interventions**: not reported	included, of which one, The Early Stage level I Memory Loss Support (ESML) group, was powered to find significant differences. After controlling for baseline differences and changes in cognition, the authors reported significant improvements in quality of life: QoL-AD scores (b=1.74; p<.001), R2=.05, effect sized=0.44. The second (a pilot study) found that quality of life improved in the intervention group compared to control group (effect size 0.46), but this fell short of statistical difference after adjusting for baseline differences. **Multi-component interventions:** One level I study tested an eclectic intervention named Preserving Identity and Planning for Advanced Care or PIPAC (four-session individual intervention employed a combination	

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
				of self-adjusting, future planning and self-maintaining, reminiscence-based work). After controlling for baseline differences, results revealed differences between intervention and control arms at post-treatment for quality of life on the BASQID (effect size=0.07). Another study involved a peri-diagnostic intervention in which participants with suspected dementia were referred to a specialist mental health team and received pre-diagnostic wellbeing assessment and counselling followed by a diagnostic consultation with written feedback and six monthly home visits for post-diagnostic support. Compared to usual care, after accounting for baseline variability, there was greater improvement in wellbeing in the recovery group as shown by the WHO-5	

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
				(61, SD=10 vs. 58, SD=13; p = 0.03).	
Reminiscence therapy					
Huang [59]	Reminiscence therapy: themes in treatment protocols including family, childhood memories, meaningful events (e.g. jobs and marriage), seasonal events in the past, festivals, and personal achievements. Five studies used a variety of tools comprising pictures, photographs, old-time music, film, and the flavour of food, as well as other familiar items from the past to excite dementia participants to reminisce. Reminiscence therapies were performed at least once a week. Average 9.46 sessions, ranging over 4 to 18 weeks. The mean dose of interventions was 595 minutes, ranging from 240 to 1440 minutes.	RCTs: Cognitive functions: The overall mean effect size was significant (g = 0.18, 95% confidence interval [CI] 0.05–0.30, p = 0.007). The test of heterogeneity was not significant (Q=7.67, p = 0.66, I^2=0.0%). Regarding the long-term effect (6–10 months after completion of treatment) of reminiscence on cognitive functions, the pooled effect size from 3 included studies was not statistically significant (g = 0.11, 95% CI 0.09–0.32, p =0.26). The test of heterogeneity was not significant (Q=2.12, p =0.35, I^2 = 5.5%).	RCTs: not reported	RCTs: not reported	This meta-analysis confirms that reminiscence therapy is effective in improving cognitive functions in elderly people with dementia. Our findings suggest that regular reminiscence therapy should be considered for inclusion as routine care for the improvement of cognitive functions in elderly people with dementia, particularly in institutionalized residents with dementia.
Support groups					
Leung [60]	Social support group interventions: treatment programme that provided any of the following: (i) education about dementia or MCI; (ii) mutual/peer	RCT: not reported	RCT: Not reported	RCT: controlling for age, sex and change in MMSE scores, participants in the social support condition reported significantly	This review provides some evidence for the effectiveness of social support group interventions for people with early-stage

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
	support; (iii) education/mutual support; and (iv) opportunities to express feelings and concerns. The intervention in one RCT was a social support group intervention, whereas in the other RCT it was multicomponent, encompassing CBT and exercise as well as the social support group intervention.			improved QoL-AD scores, compared with those in the usual care group (β=1.74; p<0.001), R2=0.05, effect size d=0.44.	dementia; however, this conclusion is based on a small number of trials with small sample sizes.
Multiple types of intervention					
Bunn [61]	Environment (n=0): any alteration to physical environment in which food and/or drink taken (e.g. furniture, sensory, food service). Education/training (n=6): educational and/or awareness component directed at patients and/or caregiver (e.g. tailored nutrition). Behavioural therapy (n=6): intervention aimed to alter behaviour (e.g. verbal prompts, music, Montessori activities). Exercise (n=3): exercise component (e.g. tai chi, exercise programme) Multicomponent (n=0): comprised ≥3 intervention	ALL studies: No clearly effective, or clearly ineffective environmental, education/training, behavioural therapy, exercise, or multicomponent interventions. Diverse range of outcome measures across included studies; detailed study results reported in supplemental tables.	ALL studies: No clearly effective, or clearly ineffective environmental, education/training, behavioural therapy, exercise, or multicomponent interventions. Diverse range of outcome measures across included studies; detailed study results reported in supplemental tables.	ALL studies: No clearly effective, or clearly ineffective environmental, education/training, behavioural therapy, exercise, or multicomponent interventions. Diverse range of outcome measures across included studies; detailed study results reported in supplemental tables.	No definitive evidence on effectiveness, or lack of effectiveness, of specific interventions but studies were small and short term. A variety of promising indirect interventions need to be tested in large, high-quality RCTs, and may be approaches that people with dementia and their formal or informal care-givers would wish to try.

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
	components including ≥1 of the above.				
Cabrera [62]	Interventions in relevant RCTs: Psychosocial and educational (n=4): individual programmes (walk and talk), psychosocial group activities (e.g. story telling) or reminiscence therapy. Physical activity (n=3) such as walking and/or conversation, physical exercises, structured form of chosen activity. Sensorial therapies (n=3): light exposure, multisensorial stimulation. Complex (n=2): interdisciplinary, such as functional rehabilitation-occupational therapy, and physiotherapy-occupational therapy-exercises.	RCTs: Results were inconsistent with studies showing improved, or little or no change in cognitive outcomes, where measured. Significant benefits were observed in general alertness with a group story telling programme (n=1; p<0.05); in communication with an individualised approach (n=1; p = 0.000); in cognition for occupational therapy plus functional rehabilitation versus occupational therapy alone (n=1; p<0.001); and in cognitive and affective function with reminiscence therapy (n=1: MMSE, p=0.0015 and CSDD, p=0.026).	RCTs: Results were inconsistent across studies evaluating functional ability, with improved, no change or reduced mobility observed in the intervention groups compared with controls. Significantly improved functional ability was reported in one study comparing physiotherapy combined with occupational therapy and exercise, physiotherapy alone and no motor intervention (control) (both interventions p<0.05 compared with no motor intervention).	RCTs: Results were inconsistent across studies evaluating QoL/wellbeing measures. Statistically significant results were reported in: QoL/wellbeing: One study found an improved QoL score with individual unstructured therapy, but no significant difference versus an individualised structured activity; greater wellbeing was observed with an interdisciplinary programme compared with functional rehabilitation alone (p<0.001). One study of a high-intensity functional exercise programme found an improvement on wellbeing scores post-intervention (p=0.03.) Mood: Participants in group story telling reported more sadness than controls (n=1; p<0.05); physical activity improved mood post	Psychosocial interventions have been shown to have the potential to improve the QoL and QoC of people with dementia in nursing homes. Before implementation of the intervention, it is recommended that activities are adjusted according to residents' characteristics and external factors controlled to achieve effectiveness and to structure a well-designed intervention. However, there is not enough evidence to support the effectiveness of non-pharmacological interventions in general. Further well-designed research is needed on non-pharmacological interventions in nursing facilities.

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
				intervention (n=1; p<0.01) but not at follow-up; multi-sensorial stimuli resulted in greater happiness and enjoyment (p<0.0001, p<0.01) than activity sessions. Sleep: Increased nocturnal sleep was obtained in one of two studies of patients receiving bright light compared with reduced light (p<0.05).	
Other interventions					
Forbes [63]	Light therapy: bright light	RCTs: Morning/daytime bright light vs control had no effect on cognition. Evening/afternoon bright light vs control had no effect on cognition. Dawn-dusk simulation with bright white light vs dim red light had no effect on cognition.	RCTs: One study measured functional limitations using NI-ADL after 6 weeks, 1 and 2 years of treatment (morning/daytime bright light vs control). After 6 weeks of treatment, light therapy had a positive effect in attenuating the increase in functional limitations (MD= -5.00, 95% CI -9.87 to -.13, p=0.04). After 1 year of treatment, there was no significant effect (MD -5.00, 95% CI -11.16 to 1.16, p= 0.11), however, a significantly less steep increase in functional	RCTs: not reported	There is insufficient evidence to assess the value of light therapy for people with dementia. Most of the available studies are not of high methodological quality and further research is required.

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
			decline was seen after 2 years of light therapy (MD= -16.00, 95% CI -26.21 to -5.79, p= 0.002).		
Forrester [65]	Aromatherapy	RCT: not reported	RCT: Activities of daily living: One study found no significant difference after 12 weeks of treatment in functional performance measured using the Barthel scale of Activities of Daily Living (n = 63, MD -0.50, 95% CI -1.79 to 0.79).	RCT: Quality of life was measured after 12 weeks using the Blau QOL Scale in one study. There was no statistically significant difference in quality of life between the participants receiving aromatherapy and those receiving placebo (n = 63, MD 19.00, 95% CI -23.12 to 61.12).	The primary outcomes of the review were 1. Agitation 2. Behavioural symptoms and 3. Adverse effects. Seven studies with 428 participants were included in this review; only two of these had published usable results. The benefits of aromatherapy for people with dementia are equivocal. One study found a statistically significant treatment effect in favour of the aromatherapy intervention on measures of agitation (n = 71, MD -11.1, 95% CI -19.9 to -2.2) and behavioural symptoms (n = 71, MD -15.8, 95% CI -24.4 to -7.2). The other study, however, found no difference in agitation (n = 63, MD 0.00, 95% CI -1.36 to 1.36) or behavioural

Review	Intervention	Key results (cognitive functioning)	Key results (functional ability)	Key results (wellbeing/quality of life)	Authors' conclusions of review
					symptoms (n = 63, MD 2.80, 95% CI -5.84 to 11.44).
Fritz [64]	Motor-cognitive dual-task training (DTT): Specific dual-task training and additional progressive resistance-balance and functional-balance training; performed in groups of 4–6 persons for 12 weeks (2 hours/week)	RCT: no significant differences in cognition as measured by the Trail Making Test	RCT: A common measure of DT ability during gait is the calculation of dual-task cost (DTC), which determines the specific effect of the secondary task on the primary task of walking: Dual task cost (DTC) = [(dual task - single task)/single task] x 100. Following DTT, individuals with AD demonstrated significantly reduced DTC for both velocity and stride length compared to the control group, where DTC was unchanged. This held true for DT walking when the secondary task was addition or subtraction.	RCT: not reported	Improvement of dual-task ability in individuals with neurologic disorders holds potential for improving gait, balance and cognition. Motor-cognitive dual-task deficits in individuals with neurologic disorders may be amenable to training.
Han [66]	Individually tailored interventions for promoting leisure or social participation	RCTs: not reported	RCTs: not reported	RCT: "improved quality of life" (no data shown)	This systematic review found that individualised leisure and social activities can benefit people with dementia in a number of ways, in particular, by promoting engagement, improving affect, and reducing both agitation and withdrawn behaviours.

Review	**Intervention**	**Key results (cognitive functioning)**	**Key results (functional ability)**	**Key results (**wellbeing**/quality of life)**	**Authors' conclusions of review**
Hsu [67]	Non-invasive brain stimulation: repetitive transcranial magnetic stimulation or transcranial direct current stimulation	RCTs: a significant mean effect size of 1.35 (95% CI: 0.86-1.84, p<0.001; heterogeneity across studies, p<0.001) was found, which after adjustment for possible publication bias was still clinically meaningful and large at an effect size of 0.78.	RCTs: not reported	RCTs: not reported	Non-invasive brain stimulation has a positive effect on cognitive function in people with Alzheimer's disease.
Lee [68]	Acupuncture	RCTs: Two RCTs assessed the effectiveness of acupuncture on cognitive function compared with drug therapy. Their results suggested no significant effect in favour of acupuncture [n = 72, weight mean difference (WMDs), -0.55; 95% confidence intervals (CIs) -1.31 to 0.21, p = 0.15, heterogeneity: I^2 = 0%].	RCTs: Two RCTs tested acupuncture for activities of daily living (ADL). One RCT reported favourable effects of drug therapy compared with acupuncture for ADL, while the other failed to so. The meta-analysis of these data showed significant effects of drug therapy compared with acupuncture (n = 72, WMD, -1.29; 95% CIs: -1.77 to -0.80, p < 0.001, heterogeneity: I^2 = 0%).	RCTs: not reported	Even though the number of studies is small, the existing evidence does not demonstrate the effectiveness of acupuncture for AD.
Ueda [69]	Music therapy	All studies: No effect on cognition (SMD 0.17, 95% CI -0.02 to +0.36, p=1.00).	All studies: No effect on ADL (SMD 0.05, 95% CI -0.23 to +0.34, p = 0.93)	RCTs/all studies: not reported	Music therapy had moderate effects on anxiety and small effects on behavioural symptoms

APPENDIX C: Systematic Reviews that were not Data Extracted

Table C.1: Included systematic reviews that were not data extracted because they are associated with a data extracted systematic review

Systematic review reference	Publication with which the review is associated
Aguirre E, Woods RT, Spector A, Orrell M. Cognitive stimulation for dementia: a systematic review of the evidence of effectiveness from randomised controlled trials. Ageing Res Rev. 2013;12(1):253-62.	Associated paper for Cochrane Review (Woods 2012) [49]
Forbes D, et a. Physical activity programs for persons with dementia. Cochrane Database of Syst Rev. 2008;(3):CD006489	Cochrane Review updated in 2008 (Forbes 2013)[10], which has since been updated again in 2015 (Forbes 2015)[53]
Forbes D, Thiessen EJ, Blake CM, Forbes SC, Forbes S. Exercise programs for people with dementia. Cochrane Database of Syst Rev 2013;(12):CD006489	Cochrane Review updated in 2015 (Forbes 2015)[53]

Table C.2: Systematic reviews that were not data extracted, because later reviews are likely to contain their studies

Systematic review reference
Anderiesen H, Scherder EJ, Goossens RH, Sonneveld MH. A systematic review--physical activity in dementia: the influence of the nursing home environment. Appl Ergon. 2014;45(6):1678-86.
Blackburn R, Bradshaw T. Music therapy for service users with dementia: A critical review of the literature. J Psychiatr Ment Health Nurs. 2014;21(10):879-88.
Brondino N, De Silvestri A, Re S, Lanati N, Thiemann P, Verna A, et al. A Systematic Review and Meta-Analysis of Ginkgo biloba in Neuropsychiatric Disorders: From Ancient Tradition to Modern-Day Medicine. Evid-Based Compl Alt. 2013;2013:915691.
Dong L, May BH, Feng M, Hyde AJ, Tan HY, Guo X, et al. Chinese Herbal Medicine for Mild Cognitive Impairment: A Systematic Review and Meta-Analysis of Cognitive Outcomes. Phytother Res. 2016;30(10):1592-604.
Egan M, Berube D, Racine G, Leonard C, Rochon E. Methods to Enhance Verbal Communication between Individuals with Alzheimer's Disease and Their Formal and Informal Caregivers: A Systematic Review. Int J Alzheimer Dis. 2010;2010:Article ID 906818.
Fung JK, Tsang HW, Chung RC. A systematic review of the use of aromatherapy in treatment of behavioral problems in dementia (Provisional abstract). Geriatr Gerontol Int. 2012;12(3):372-82.
Hanson LC, Ersek M, Gilliam R, Carey TS. Oral feeding options for people with dementia: A systematic review. J Am Geriatr Soc. 2011;59(3):463-72.
Janssen IM, Sturtz S, Skipka G, Zentner A, Velasco Garrido M, Busse R. Ginkgo biloba in Alzheimer's disease: a systematic review. Wien Med Wochenschr. 2010;160(21-22):539-46.
Jiang L, Su L, Cui H, Ren J, Li C. Ginkgo biloba extract for dementia: a systematic review. Shanghai Jingshen Yixue. 2013;25(1):10-21.
Liao X, Li G, Wang A, Liu T, Feng S, Guo Z, et al. Repetitive Transcranial Magnetic Stimulation as an Alternative Therapy for Cognitive Impairment in Alzheimer's Disease: A Meta-Analysis. J Alzheimers Dis. 2015;48(2):463-72.
Liu W, Galik E, Boltz M, Nahm ES, Resnick B. Optimizing Eating Performance for Older Adults With Dementia Living in Long-term Care: A Systematic Review. Worldviews on evidence-based nursing / Sigma Theta Tau International, Honor Society of Nursing. 2015;12(4):228-35.
Malouf R, Grimley Evans J. Folic acid with or without vitamin B12 for the prevention and treatment of healthy elderly and demented people. Cochrane Database Syst Rev. 2008:
Man SC, Durairajan SSK, Kum WF, Lu JH, Huang JD, Cheng CF, et al. Systematic review on the efficacy and safety of herbal medicines for Alzheimer's disease. J Alzheimers Dis. 2008;14(2):209-23.
Mazereeuw G, Lanctot KL, Chau SA, Swardfager W, Herrmann N. Effects of omega-3 fatty acids on cognitive performance: A meta-analysis. Neurobiol Aging. 2012;33(7):1482.
McDermott O, Crellin N, Ridder HM, Orrell M. Music therapy in dementia. Int J Geriatr Psychiatry. 2013;28(8)

Systematic review reference
Rijpma A, Meulenbroek O, Olde Rikkert MG. Cholinesterase inhibitors and add-on nutritional supplements in Alzheimer's disease: a systematic review of randomized controlled trials. Ageing Res Rev. 2014;16(July):105-12.
Subramaniam P, Woods B. The impact of individual reminiscence therapy for people with dementia: systematic review. Expert Rev Neurother. 2012;12(5):545-55.
Tan MS, Yu JT, Tan CC, Wang HF, Meng XF, Wang C, et al. Efficacy and adverse effects of ginkgo biloba for cognitive impairment and dementia: a systematic review and meta-analysis. J Alzheimers Dis. 2015;43(2):589-603.
Voigt-Radloff S, Ruf G, Vogel A, van Nes F, Hull M. Occupational therapy for elderly. Evidence mapping of randomised controlled trials from 2004-2012. Z Gerontol Geriatr. 2015;48(1):52-72.
von Gunten A, Schlaefke S, Uberla K. Efficacy of Ginkgo biloba extract EGb 761 in dementia with behavioural and psychological symptoms: A systematic review. World J Biol Psychiatry. 2015:no pagination.
Wang BS, Wang H, Song YY, Qi H, Rong ZX, Wang BS, et al. Effectiveness of standardised Ginkgo biloba extract on cognitive symptoms of dementia with a six-month treatment: a bivariate random effect meta-analysis. Pharmacopsychiatry. 2010;43(3):86-91.
Weinmann S, Roll S, Schwarzbach C, Vauth C, Willich SN. Effects of Ginkgo biloba in dementia: systematic review and meta-analysis. BMC Geriatrics. 2010;10:14.
Whear R, Coon JT, Bethel A, Abbott R, Stein K, Garside R. What Is the Impact of Using Outdoor Spaces Such as Gardens on the Physical and Mental Wellbeing of Those With Dementia? A Systematic Review of Quantitative and Qualitative Evidence. J Am Med Dir Assoc. 2014;15(10):697-705.
Xing SH, Zhu CX, Zhang R, An L. Huperzine a in the treatment of Alzheimer's disease and vascular dementia: a meta-analysis. Evid Based Complement Alternat Med. 2014;2014:363985.
Yang M, Xu DD, Zhang Y, Liu X, Hoeven R, Cho WC. A systematic review on natural medicines for the prevention and treatment of Alzheimer's disease with meta-analyses of intervention effect of Ginkgo. Am J Chin Med. 2014;42(3):505-21.
Young R, Camic PM, Tischler V. The impact of community-based arts and health interventions on cognition in people with dementia: a systematic literature review. Aging Ment Health. 2016;20(4):337-51.
Yu-Shiun C, Hsin C, Chyn-Yng Y, Jui-Chen T, Min-Huey C, Yuan-Mei L, et al. The efficacy of music therapy for people with dementia: A meta-analysis of randomised controlled trials. J Clin Nurs. 2015;24(23/24):3425-40.

Table C.3: Other systematic reviews which were not data extracted, with specific reasons

Systematic review reference	Reasons for not data extracting
Alves J, Magalhaes R, Thomas RE, Goncalves OF, Petrosyan A, Sampaio A. Is there evidence for cognitive intervention in Alzheimer disease? A systematic review of efficacy, feasibility, and cost-effectiveness. Alzheimer Dis Assoc Disord. 2013;27(3):195-203.	Moderate quality (limited patient details); only RCTs eligible (up to 2011); focus on cognition. Limited use since only 4 RCTs; studies of CS and cognitive training likely to be covered by other SRs
Blankevoort CG, Heuvelen MJ, Boersma F, Luning H, Jong J, Scherder EJ. Review of effects of physical activity on strength, balance, mobility and ADL performance in elderly subjects with dementia. Dement Geriatr Cogn Disord. 2010;30(5):392-402.	Good quality; various study designs eligible (up to 2009); range of interventions; focus on functional ability; likely covered by Cochrane review (Forbes 2015)[53]
Chen M-D. Effects of Exercise in Adults with Physical and Cognitive Disabilities - A Meta-Analysis. University of Illinois at Chicago; 2011.	Difficult to extract meaningful data and date range; studies most likely covered by other reviews. Thesis. Moderate quality (presentation of data); RCTs eligible (up to 2010). Various aspects of included studies tabulated by Health Outcome (relevant ones:

Systematic review reference	Reasons for not data extracting
	functional health, mental health) and Disability Group (relevant ones: Alzheimer's, Parkinson's, Multiple sclerosis). Across all health outcomes, 30 RCTs for relevant disability groups: 17 MS, 9 PD, 4 AD. 18 RCTs reporting functional and mental health outcomes: 8 PD, 6 MS, 4 AD (ref nos. 126-133; 31, 110, 112-114, 116; 76-79). Difficult to extract relevant results as written up by health outcome
Chou A, Bursley B, Smulofsky J, Jezequel J. Systematic Review of the Effects of Exercise on Activities of Daily Living in People With Alzheimer's Disease. Am J Occup Ther. 2014;68(1):50-56.	Poor quality (main factor: no summary tables); RCTs eligible (studies date up 2012); focus on activities of daily living/function; given date range, studies likely covered by other SRs
Cooper C, Mukadam N, Katona C, Lyketsos CG, Ames D, Rabins P, et al. Systematic review of the effectiveness of non-pharmacological interventions to improve quality of life of people with dementia. Int Psychogeriatr. 2012;24(6):856-70.	Moderate quality (lacking patient details); only RCTs eligible (up to 2011); focus on QOL/wellbeing. Given date range and diverse range of interventions studied (CS, cognitive rehabilitation, physical activity etc.), studies likely to be covered by other SRs
Farina N, Rusted J, Tabet N. The effect of exercise interventions on cognitive outcome in Alzheimer's disease. Int Psychogeriatr. 2014;26(1):9-18.	Moderate quality (limited participant details); RCTs eligible (up to 2012); focus on cognition; meta-analysis; given date range, studies likely covered by other SRs
Guzmán-García A, Hughes JC, James IA, Rochester L. Dancing as a psychosocial intervention in care homes: a systematic review of the literature. Int J Geriatr Psychiatry. 2013;28(9):914-24.	Good quality; various designs eligible (up to 2012); cognition relevant outcome (mainly BPSD outcomes). Limited use as only 1 relevant RCT; likely to be covered by other SR
Health Quality Ontario. Caregiver- and patient-directed interventions for dementia: an evidence-based analysis. Ont Health Technol Assess Ser. 2008;8(4):1-98.	Poor quality (no list of included studies; no summary tables). Only four research questions relate to patients with dementia and few RCTs were found. Limited use as only 1 relevant RCT; likely to be covered by another SR.
Hill KD, Hunter SW, Batchelor FA, Cavalheri V, Burton E. Individualised home-based exercise programs for older people to reduce falls and improve physical performance: A systematic review and meta-analysis. Maturitas. 2015;82(1):72-84.	Good quality; RCTs and quasi-experimental designs eligible (up to 2014); focus on functional ability. Limited use since only 2 relevant RCTs (1 each of AD and PD); likely to be covered by other SRs
Hindle JV, Petrelli A, Clare L, Kalbe E. Nonpharmacological enhancement of cognitive function in Parkinson's disease: a systematic review. Mov Disord. 2013;28(8):1034-49.	Reasonable quality study that focused on cognition. Populations in RCTs were mixed and comprised patients with Parkinson's disease who were cognitively healthy, cognitively impaired, or with depression. There were 'no RCTs of patients with Parkinson's disease dementia.
Horr T, Messinger-Rapport B, Pillai JA. Systematic review of strengths and limitations of randomized controlled trials for non-pharmacological interventions in mild cognitive impairment: focus on Alzheimer's disease. J Nutr Health Aging. 2015;19(2):141-53.	Good quality; only RCTs eligible (up to 2014). Focus of review on quality and methodology of included studies, although does report study results (for cogntion). Population comprised patients with various forms of MCI, of which amnestic MCI has since been classified as an ineligible population.
Inskip M, Mavros Y, Sachdev PS, Fiatarone Singh MA. Exercise for Individuals with Lewy Body Dementia: A Systematic Review. PLOS ONE. 2016;11(6):e0156520.	Moderate quality (lacking study details); various study designs eligible (up to 2015); focus on functional ability. Limited use since only 1 relevant RCT (and only subset of 4 patients with PD-dementia analysed); likely covered by other SR
Jean L, Bergeron ME, Thivierge S, Simard M. Cognitive intervention programs for	Moderate quality (lacks patients' characteristics); review focus on cognition. Populations comprised

Systematic review reference	Reasons for not data extracting
individuals with mild cognitive impairment: systematic review of the literature. Am J Geriatr Psychiatry. 2010;18(4):281-96.	patients with amnestic MCI, which has since been classified as an ineligible population
Kurz AF, Leucht S, Lautenschlager NT. The clinical significance of cognition-focused interventions for cognitively impaired older adults: a systematic review of randomized controlled trials. Int Psychogeriatr. 2011;23(9):1364-75.	Moderate quality (limited participant characteristics); only RCTs eligible (up to 2010); meta-analysis of studies of dementia and MCI; some interventions in combination with pharmacologics. Given date range, interventions evaluated likely covered by other SR more specific to dementia patients. (NB, authors state that since many CR interventions include CT elements they combined these intervention types into one category.
Law LL, Barnett F, Yau MK, Gray MA. Effects of combined cognitive and exercise interventions on cognition in older adults with and without cognitive impairment: a systematic review. Ageing Res Rev. 2014;15:61-75.	Good quality; RCTs and non-RCTs eligible (up to 2013); focus on cognition; reports results separately for cognitively healthy and cognitively impaired. Limited use since only 2 relevant RCTs (1 dementia, 1 amnestic MCI); studies likely covered by other SRs
Lee HS, Park SW, Park YJ. Effects of Physical Activity Programs on the Improvement of Dementia Symptom: A Meta-Analysis. Biomed Res Int. 2016:1-7.	Poor quality (unclear inclusion criteria and search; lacks details of participants/control); only RCTs eligible (up to 2015); meta-analysis; given nature of interventions, studies likely covered by other SRs
Littbrand H, Stenvall M, Rosendahl E. Applicability and Effects of Physical Exercise on Physical and Cognitive Functions and Activities of Daily Living Among People With Dementia: A Systematic Review. Am J Phys Med Rehabil. 2011;90(6):495-518.	Good quality; only RCTs eligible (up to 2010); meta-analysis; given nature of interventions, studies likely covered by other SRs
McDonnell MN, Smith AE, Mackintosh SF. Aerobic Exercise to Improve Cognitive Function in Adults With Neurological Disorders: A Systematic Review. Arch Phys Med Rehabil. 2011;92(7):1044-52.	Moderate quality (search details); RCTs and CCTs eligible (up to 2010); focus on cognition. Limited use given date range and only 4 relevant RCTs (2 MS, 1 AD, and 1 dementia); studies likely covered by other SRs
McLaren AN, LaMantia MA, Callahan CM. Systematic review of non-pharmacologic interventions to delay functional decline in community-dwelling patients with dementia. Aging Ment Health. 2013;17(6):655-66.	Moderate quality (no details of actual study populations or control interventions); only RCTs eligible (dates up to 2010); limited use given lack of participants and control groups; other SRs may be more informative
Ohman H, Savikko N, Strandberg TE, Pitkala KH. Effect of physical exercise on cognitive performance in older adults with mild cognitive impairment or dementia: a systematic review. Dement Geriatr Cogn Disord. 2014;38(5-6):347-65.	Good quality; RCTs eligible (up to 2014); focus on cognition; reports results separately for patients with dementia; given nature of interventions and date range, studies most likely covered by other SRs.
Olazarán J, Reisberg B, Clare L, Cruz I, Peña-Casanova J, del Ser T, et al. Nonpharmacological therapies in Alzheimer's disease: a systematic review of efficacy. Dement Geriatr Cogn Disord. 2010;30(2):161-78.	Poor quality (main factor: no details of individual studies). Only RCTs eligible (up to 2008); range of interventions and outcomes. Tabulates number of publications reporting each outcome according to intervention. Provides table detailing essential characteristics of NPTs recommended in AD-related dementia on the basis of homogeneous evidence from low-quality RCTs (grade B recommendations), based on outcome (not all relevant).
Oren S, Willerton C, Small J. Effects of Spaced Retrieval Training on Semantic Memory in Alzheimer's Disease: A Systematic Review. JSLHR. 2014;57(1):247-70.	Moderate quality; any study design eligible (up to 2012); focus on cognition; meta-analysis across all study designs. Limited use since only 2 relevant RCTs; studies/interventions likely to be covered by other SR

Systematic review reference	Reasons for not data extracting
Pitkala K, Savikko N, Poysti M, Strandberg T, Laakkonen ML. Efficacy of physical exercise intervention on mobility and physical functioning in older people with dementia: a systematic review. Exp Gerontol. 2013;48(1):85-93.	Good quality; RCTs eligible (up to 2011); focus on functional ability; given nature of interventions and date range, studies most likely covered by other SRs.
Potter R, Ellard D, Rees K, Thorogood M. A systematic review of the effects of physical activity on physical functioning, quality of life and depression in older people with dementia. Int J Geriatr Psychiatry. 2011;26(10):1000-11.	Moderate quality (limited participant/control details); RCT and CCTs of patients 60+ eligible (up to 2009); focus on functional ability. Authors stated they set wider inclusion criteria than those of the Cochrane Review ([9] Forbes 2008); studies likely to be covered by updated CR ([53] Forbes 2015)
Rao AK, Chou A, Bursley B, Smulofsky J, Jezequel J. Systematic Review of the Effects of Exercise on Activities of Daily Living in People With Alzheimer's Disease. Am J Occup Ther. 2014;68(1):50-56.	Poor quality (main factor: no summary table of studies); RCTs of patients aged 65+ years included (studies dated up to 2012); meta-analysis; given only 6 RCTs identified and date range, these are likely to be covered by other SRs.
Strohle A, Schmidt DK, Schultz F, Fricke N, Staden T, Hellweg R, et al. Drug and Exercise Treatment of Alzheimer Disease and Mild Cognitive Impairment: A Systematic Review and Meta-Analysis of Effects on Cognition in Randomized Controlled Trials. Am J Geriatr Psychiatry. 2015;23(12):1234-49.	Poor quality (main factor: lacks study details); only RCTs eligible (up to 2013); focus on cognition; meta-analysis. Limited use since 5 RCTs of Gingko and 4 RCTs of exercise - likely covered by other SRs
Strom BS, Ytrehus S, Grov EK. Sensory stimulation for persons with dementia: a review of the literature. J Clin Nurs. 2016;25(13-14):1805-34.	Moderate quality (limited patient details); various study designs eligible (up to 2015). Wide range of sensorial interventions but few relevant studies of each (maximum 4) and multiple targets (studies of BPSD, e.g. agitation, anxiety, not relevant). Results tabulated/discussed according to intervention, but not study design. Other SRs (e.g. [62] Cabrera 2015) may be more informative.
Van Uffelen JGZ, Chin APMJM, Hopman-Rock M, Van Mechelen W. The effects of exercise on cognition in older adults with and without cognitive decline: A systematic review. Clin J Sport Med. 2008;18(6):486-500.	Moderate quality (multiple summary tables, not concise format); RCTs eligible (up to 2007; focus on cognition; reports results separately for cognitively healthy and cognitively impaired. Limited use given date range and only 4/8 RCTs of adults with cognitive decline specify patients with dementia or MMSE score <20; studies likely covered by other SRs
Wen L, Jooyoung C, Thomas SA. Interventions on mealtime difficulties in older adults with dementia: A systematic review. Int J Nurs Stud. 2014;51(1):14-27.	Moderate quality; various study designs eligible (up to 2012); focus on feeding-related outcomes. limited use since only 6 relevant RCTs (up to 2011): 4 nutritional supplements and 2 training/education; likely covered by other SRs.
Ye-Won S, Jae-Shin L, Song AY. Meta-analysis about cognitive intervention effect applied to dementia patients. NeuroRehabilitation. 2016;39(2):319-27.	Moderate quality; only RCTs eligible up to 2015); meta-analysis (cognitive function). Limited use since3-6 studies per intervention (RCTs up to 2013) - likely covered by other SRs of cognitive methods
Zabalegui A, Hamers JP, Karlsson S, Leino-Kilpi H, Renom-Guiteras A, Saks K, et al. Best practices interventions to improve quality of care of people with dementia living at home. Patient Educ Couns. 2014;95(2):175-84.	Poor quality (main factor: summary tables lacking); only RCTs eligible (up to 2012). Interventions target patients and/or caregivers. Limited use since only 4 RCTs (up to 2010) with relevant population and outcomes - likely covered by other SRs of cognitive methods

APPENDIX D: Excluded Publications

Table D.1: Excluded publications based on full text assessment, with reasons for exclusion

Publication reference	Reason for exclusion
Abraha I, Cherubini A, Trotta F, Rimland J, Dell'Aquila G, Pierini V, et al. Recommendations for non-pharmacological interventions to prevent behavioural disturbances in older patients with dementia. Applying the GRADE approach. The senator project ONTOP series. Eur Geriatr Med. 2015;6:S21.	Insufficient / irrelevant information
Abraha I, Cruz-Jentoft A, Soiza RL, O'Mahony D, Cherubini A. Evidence of and recommendations for non-pharmacological interventions for common geriatric conditions: the SENATOR-ONTOP systematic review protocol. BMJ Open. 2015;5(1):e007488.	Ineligible outcomes
Abraha I, Rimland JM, Lozano-Montoya I, Dell'Aquila G, Velez-Diaz-Pallares M, Trotta FM, et al. Simulated presence therapy for dementia: a systematic review protocol. BMJ Open. 2016;6(5):e011007.	Ineligible outcomes
Abraham R, Denton D, Al-Assaf A, Rutjes A, Chong Lee Y, Malik Muzaffar A, et al. Vitamin and mineral supplementation for prevention of dementia or delaying cognitive decline in people with mild cognitive impairment. Cochrane Database Syst Rev. 2015(10):CD011905.	Ineligible outcomes
Abrisqueta-Gomez J, De Souza Saviotti KRS, Ponce CSC, Locatelli FLV, Batista DLF. Non-pharmacologic intervention in people with dementia in Brazil: An overview. Alzheimers Dement. 2013;9(4 SUPPL. 1):P495-P96.	Insufficient / irrelevant information
Abubakari AR, Naderali MM, Naderali EK. Omega-3 fatty acid supplementation and cognitive function: Are smaller dosages more beneficial? Int J Gen Med. 2014;7:463-73.	Ineligible patient population
Aggarwal A. Stay healthy through game-care therapeutics: It's time to play the game! Value Health. 2011;14(7):A298.	Insufficient / irrelevant information
Akhondzadeh S, Abbasi SH. Herbal medicine in the treatment of Alzheimer's disease. Am J Alzheimers Dis Other Demen. 2006;21(2):113-18.	Ineligible study design
Algar K, Windle G. Arts programmes and quality of life for people with dementia: a review. J Dement Care. 2011;19(3):33-37.	Ineligible study design
Annersted M, Wahrborg P. Nature-assisted therapy: systematic review of controlled and observational studies. Scand J Public Health. 2011;39(4):371-88.	Ineligible patient population
Anonymous. "Are cognitive interventions effective in Alzheimer's disease? A controlled meta- analysis of the effects of bias": Correction to Oltra-Cucarella et al. (2016). Neuropsychology. 2016;30(5):652.	Ineligible study design
Anonymous. International Congress on Integrative Medicine and Health, ICIMH 2016. J Altern Complement Med. 2016;22(6):Conference Proceedings.	Ineligible study design
Arbesman M, Lieberman D. Methodology for the Systematic Reviews on Occupational Therapy for Adults With Alzheimer's Disease and Related Dementias. Am J Occup Ther. 2011;65(5):490-96.	Ineligible study design
Ayalon L, Gum AM, Feliciano L, Arean PA. Effectiveness of nonpharmacological interventions for the management of neuropsychiatric symptoms in patients with dementia: a systematic review (Structured abstract). Arch Intern Med. 2006;166(20):2182-88.	Ineligible patient population
Bahar-Fuchs A, Clare L, Woods B. Cognitive training and cognitive rehabilitation for persons with mild to moderate dementia of the Alzheimer's or vascular type: a review. Alzheimers Res Ther. 2013;5(4):35.	Duplicate
Bahar-Fuchs A, Hampstead BM, Clare L. Cognitive training for older adults with MCI and mild dementia: State of the science, central challenges, and possible solutions. Alzheimers Dement. 2014;10:P157.	Ineligible study design
Balk E, Chung M, Raman G, Tatsioni A, Chew P, Ip S, et al. B vitamins and berries and age-related neurodegenerative disorders. Evid Rep/Technol Assess. 2006(134):1-161.	Ineligible study design

Publication reference	Reason for exclusion
Ballard C. Behavioral alternatives to antipsychotic prescribing for people with dementia in residential care settings. Alzheimers Dement. 2012;8(4 SUPPL. 1):P230.	Ineligible study design
Barnard K, Colon-Emeric C. Extraskeletal effects of vitamin D in older adults: cardiovascular disease, mortality, mood, and cognition. Am J Geriatr Pharmacother. 2010;8(1):4-33.	Ineligible patient population
Bayles KA, Kim E, Chapman SB, Zientz J, Rackley A, Mahendra N, et al. Evidence-based practice recommendations for working with individuals with dementia: simulated presence therapy. J Med Speech Lang Path. 2006;14(3):xiii-xxi.	Ineligible study design
Beard RL. Art therapies and dementia care: A systematic review. Dementia (14713012). 2012;11(5):633-56.	Ineligible study design
Benbow SM, Sharman V. Review of family therapy and dementia: Twenty-five years on. Int Psychogeriatr. 2014;26(12):2037-50.	Ineligible study design
Bernabei V, De Ronchi D, La Ferla T, Moretti F, Tonelli L, Ferrari B, et al. Animal-assisted interventions for elderly patients affected by dementia or psychiatric disorders: a review. J Psychiatr Res. 2013;47(6):762-73.	Ineligible study design
Bharucha AJ, Dew MA, Miller MD, Borson S, Reynolds C. Psychotherapy in long-term care: a review. J Am Med Dir Assoc. 2006;7(9):568-80.	Ineligible study design
Birks J, Grimley Evans J. Ginkgo biloba for cognitive impairment and dementia. Cochrane Database Syst Rev. 2007(2):CD003120.	Ineligible study design
Boeve BF. A review of the non-Alzheimer dementias. J Clin Psychiatry. 2006;67(12):1985-2001.	Ineligible outcomes
Boggio PS, Valasek CA, Campanha C, Alem Giglio AC, Baptista NI, Lapenta OM, et al. Non-invasive brain stimulation to assess and modulate neuroplasticity in Alzheimer's disease. Neuropsychol Rehabil. 2011;21(5):703-16.	Ineligible study design
Bohlmeijer E, et al. The effects of reminiscence on psychological well-being in older adults: a meta-analysis. Aging Ment Health. 2007;11(3):291-300.	Ineligible study design
Boote J, et a. Psychosocial interventions for people with moderate to severe dementia: a systematic review. Clin Eff Nurs. 2006;9(Suppl 1):e1-e15.	Ineligible study design
Booth V, Hood V, Kearney F. Interventions incorporating physical and cognitive elements to reduce falls risk in cognitively impaired older adults: A systematic review protocol. JBI Database System Rev Implement Rep. 2015;13(8):5-13.	Ineligible outcomes
Booth V, Logan P, Harwood R, Hood V. Falls prevention interventions in older adults with cognitive impairment: A systematic review of reviews. Int J Ther Rehabil. 2015;22(6):289-96.	Ineligible outcomes
Bourgeois MS. Restricted literature base limits interpretation of meta-analysis of the effectiveness of communication-enhancing interventions in dementia. EBCAI. 2013;7(1):1-3.	Ineligible study design
Brandão D, Martín JI. Montessori Method applied to dementia -- Literature review. Revista Gaucha de Enfermagem. 2012;33(2):197-204.	Non-English language article
Brendler T, Gruenwald J, Kligler B, Keifer D, Abrams TR, Woods J, et al. Lemon balm (Melissa officinalis L.): An evidence-based systematic review by the natural standard research collaboration. J Herb Pharmacother. 2006;5(4):71-114.	Ineligible study design
Brodaty H, Arasaratnam C. Meta-analysis of nonpharmacological interventions for neuropsychiatric symptoms of dementia. Am J Psychiatry. 2012;169(9):946-53.	Ineligible patient population
Brunelle-Hamann L, Simard M, Thivierge S. Effects of cognitive training on behavioral and psychological symptoms in alzheimer's disease: A systematic review of the literature. J Neuropsychiatry Clin Neurosci. 2013;25(2):33.	Ineligible patient population
Buettner LL, Yu F, Burgener SC. Evidence supporting technology-based interventions for people with early-stage Alzheimer's disease. J Gerontol Nurs. 2010;36(10):15-19.	Ineligible study design
Burckhardt M, Herke M, Wustmann T, Fink A, Watzke S, Langer G. Souvenaid for Alzheimer's disease. Cochrane Database Syst Rev. 2015(5):CD011679.	Ineligible outcomes

Publication reference	Reason for exclusion
Burns A. Review of Frontotemporal dementia syndromes. Brit J Psych. 2009;195(1):94.	Ineligible study design
Burton E, Cavalheri V, Adams R, Browne CO, Bovery-Spencer P, Fenton AM, et al. Effectiveness of exercise programs to reduce falls in older people with dementia living in the community: a systematic review and meta-analysis. Clin Interv Aging. 2015;10:421-34.	Ineligible outcomes
Busse M, Khalil H, Brooks S, Quinn L, Rosser A. Practice, progress and future directions for physical therapies in Huntingtons disease. J Huntingtons Dis. 2012;1(2):175-85.	Ineligible study design
Butler R, Radhakrishnan R. Dementia. BMJ Clin Ev. 2012;Sept 10(9):1-27.	Ineligible study design
Caddell LS, Clare L. Interventions supporting self and identity in people with dementia: A systematic review. Aging Ment Health. 2011;15(7):797-810.	Ineligible study design
Cai Y, Abrahamson K. How Exercise Influences Cognitive Performance When Mild Cognitive Impairment Exists: A Literature Review. J Psychosoc Nurs Ment Health Serv. 2016;54(1):25-35.	Ineligible patient population
Camfield DA, Owen L, Scholey AB, Pipingas A, Stough C. Dairy constituents and neurocognitive health in ageing. Br J Nutr. 2011;106(2):159-74.	Ineligible study design
Candelise L, Hughes R, Liberati A, Uitdehaag BMJ, Warlow C, editors. Evidence-based neurology: Management of neurological disorders: Blackwell Publishing, BMJ Books; 2007. Available from: http://onlinelibrary.wiley.com/book/10.1002/9780470988350	Ineligible study design
Caprani N, Greaney J, Porter N. A Review of Memory Aid Devices for an Ageing Population. PsychNology Journal. 2006;4(3):205-43.	Ineligible study design
Carthery-Goulart MT, da Costa da Silveira A, Machado TH, Mansur LL, de Mattos Pimenta Parente MA, Senaha MLH, et al. Nonpharmacological interventions for cognitive impairments following primary progressive aphasia: A systematic review of the literature. Dement Neuropsychol. 2013;7(1):122-31.	Ineligible study design
Casarin FS, Branco L, Pereira N, Kochhann R, Gindri G, Fonseca RP. Rehabilitation of lexical and semantic communicative impairments: An overview of available approaches. Dement Neuropsychol. 2014;8(3):266-77.	Ineligible patient population
Chang SM, Sung HCC. The effectiveness of seal-like robot therapy on mood and social interactions of older adults: A systematic review protocol. JBI Library of Systematic Reviews. 2013;11(10):68-75.	Ineligible outcomes
Chatterton W, Baker F, Morgan K. The singer or the singing: Who sings individually to persons with dementia and what are the effects? [References]. Am J Alzheimers Dis Other Demen. 2010;25(8):641-49.	Ineligible study design
Chaudhury H, Hung L, Badger M. The role of physical environment in supporting person-centered dining in long-term care: A review of the literature. Am J Alzheimers Dis Other Demen. 2013;28(5):491-500.	Ineligible study design
Che Me R, Biamonti A. Spatial disorientation in Alzheimer's disease (AD): Systematic review on supportive environment in assisting the constant activities of daily living (ADLs). Eur Geriatr Med. 2014;5:S92.	Ineligible study design
Chen JJY, Teow PP, Tan D, Ng YL. Effectiveness of exercise on older adults with dementia: A systematic review. SingHealth. 2012;21:S353.	Insufficient / irrelevant information
Chenoweth L, Stein-Parbury J, Lapkin S, Wang Yueping A. Organisational interventions for promoting person-centred care for people with dementia. Cochrane Database Syst Rev. 2015(11):CD011963.	Ineligible intervention
Cherney LR, van Vuuren S. Telerehabilitation, virtual therapists, and acquired neurologic speech and language disorders. Semin Speech Lang. 2012;33(3):243-57.	Ineligible study design
Chi JF, Niu JZ, Xu SQ, Li J, Wang JF, Liu JP. Treatment of Alzheimer disease: an evidence-based review. Chin J Integr Med. 2007;5(3):247-54.	Non-English language article
Cho KM, Lee S, Bloomer M. The effectiveness of interventions on the quality of life of people with major neurocognitive disorder (Dementia) in residential	Ineligible outcomes

Publication reference	Reason for exclusion
long-term care: A systematic review protocol. JBI Database System Rev Implement Rep. 2014;12(12):79-90.	
Choi J, Twamley EW. Cognitive rehabilitation therapies for Alzheimer's disease: A review of methods to improve treatment engagement and self-efficacy. Neuropsychol Rev. 2013;23(1):48-62.	Ineligible study design
Christofoletti G, Oliani MM, Gobbi S, Stella F. Effects of motor intervention in elderly patients with dementia: an analysis of randomized controlled trials. TGR. 2007;23(2):149-54.	Ineligible study design
Clarkson P, Giebel CM, Larbey M, Roe B. A protocol for a systematic review of effective home support to people with dementia and their carers: components and impacts. J Adv Nurs. 2016;72(1):186-96.	Ineligible outcomes
Cole M, Howard M. Animal-assisted therapy: Benefits and challenges. In: Grassberger M, Sherman R, Gileva O, Kim C, Mumcuoglu K, editors. Biotherapy - History, Principles and Practice. A Practical Guide to the Diagnosis and Treatment of Disease using Living Organisms: SpringerLink; 2013. p. 233-53.	Ineligible study design
Corbett A, Stevens J, Aarsland D, Day S, Moniz-Cook E, Woods R, et al. Systematic review of services providing information and/or advice to people with dementia and/or their caregivers. Int J Geriatr Psychiatry. 2012;27(6):628-36.	Ineligible intervention
Corey-Bloom J, Yaari R, Weisman D. Managing patients with Alzheimer's disease. Practical Neurology. 2006;6(2):78-89.	Ineligible study design
Cotelli M, Manenti R, Zanetti O. Reminiscence therapy in dementia: A review. Maturitas. 2012;72(3):203-05.	Ineligible study design
Cowdell F. Review of Early psychosocial intervention in dementia. J Psychiatr Ment Health Nurs. 2009;16(7):681.	Ineligible study design
Cowl AL, Gaugler JE. Efficacy of Creative Arts Therapy in Treatment of Alzheimer's Disease and Dementia: A Systematic Literature Review. Act Adapt Aging. 2014;38(4):281-330.	Ineligible study design
Creighton AS, van der Ploeg ES, O'Connor DW. A literature review of spaced-retrieval interventions: a direct memory intervention for people with dementia. Int Psychogeriatr. 2013;25(11):1743-63.	Ineligible study design
Crichton GE, Bryan J, Murphy KJ. Dietary antioxidants, cognitive function and dementia--a systematic review. Plant Foods Hum Nutr. 2013;68(3):279-92.	Ineligible patient population
Crichton GE, Robbins MA, Elias MF. Homocysteine, folic acid, B vitamins, and cognitive functioning: A review of the literature. In: Waldstein SR, editor. Neuropsychology of cardiovascular disease., 2nd ed. New York, NY, US: Psychology Press; 2015. p. 265-94.	Ineligible study design
Croot K, Nickels L, Laurence F, Manning M. Impairment- and activity/participation-directed interventions in progressive language impairment: Clinical and theoretical issues. Aphasiology. 2009;23(2):125-60.	Ineligible study design
Cummings SM, Kropf NP. Handbook of Psychosocial Interventions With Older Adults: Evidence Based Approaches. New York, NY, US. Routledge. 2009.Available from: https://www.routledge.com/Handbook-of-Psychosocial-Interventions-with-Older-Adults-Evidence-based/Cummings-Kropf/p/book/9780415481861	Ineligible study design
Daiello LA, Wellenius G, Ott BR, Buka SL. Role of supplemental docosahexaenoic acid (DHA) for cognition in Alzheimer's disease and mild cognitive impairment: A systematic review and meta-analysis of randomized controlled trials. Alzheimers Dement. 2015;11(7 SUPPL. 1):P611.	Insufficient / irrelevant information
D'Amico M. Update on Productive Aging in the American Journal of Occupational Therapy 2011. Am J Occup Ther. 2012;66(4):e61-72.	Ineligible study design
Dangour AD, Whitehouse PJ, Rafferty K, Mitchell SA, Smith L, Hawkesworth S, et al. B-vitamins and fatty acids in the prevention and treatment of Alzheimer's disease and dementia: a systematic review. J Alzheimers Dis. 2010;22(1):205-24.	Ineligible patient population

Publication reference	Reason for exclusion
de Assis Carvalho do Vale F, Neto YC, Ferreira Bertolucci PH, Barbosa Machado JC, da Silva DJ, Allam N, et al. Treatment of Alzheimer's disease in Brazil: I. Cognitive disorders. Dement Neuropsychol. 2011;5(3):178-88.	Ineligible study design
de Joode E, van Heugten C, Verhey F, van Boxtel M. Efficacy and usability of assistive technology for patients with cognitive deficits: a systematic review. Clin Rehabil. 2010;24(8):701-14.	Ineligible study design
Del Signore D. Review of Kaleidoscope...Color and form illuminate darkness: An exploration of art therapy and exercises for patients with dementia. Art Therapy. 2007;24(4):195-96.	Ineligible study design
Demirtas-Tatlidede A, Vahabzadeh-Hagh AM, Pascual-Leone A. Can noninvasive brain stimulation enhance cognition in neuropsychiatric disorders? Neuropharmacology. 2013;64:566-78.	Ineligible study design
Deng M, Wang XF. Acupuncture for amnestic mild cognitive impairment: a meta-analysis of randomised controlled trials. Acupunct Med. 2016;34(5):342-48.	Ineligible comparator
Deshmukh Sunita R, Holmes J, Cardno A. Art therapy for people with dementia. Cochrane Database Syst Rev. 2014(4):CD011073.	Ineligible outcomes
Di Marco LY, Marzo A, Munoz-Ruiz M, Ikram MA, Kivipelto M, Ruefenacht D, et al. Modifiable Lifestyle Factors in Dementia: A Systematic Review of Longitudinal Observational Cohort Studies. J Alzheimers Dis. 2014;42(1):119-35.	Ineligible outcomes
Dias A, Motghare D, Acosta D, Roy J, Jotheeswaran AT, Martins RN. Trials of interventions for people with dementia. Oxford: Oxford University Press; 2014.	Ineligible study design
Dickson K, Lafortune L, Kavanagh J, Thomas J, Mays N, Erens B. Non-drug treatments for symptoms in dementia: an overview of systematic reviews of non-pharmacological interventions in the management of neuropsychiatric symptoms and challenging behaviours in patients with dementia. Book. London: ePPI Centre PIRU: Policy Innovation Research Unit; 2012. Available from: http://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/Dickson_R2012_Dementia%20treatments.pdf?ver=2013-03-20-163715-197.	Ineligible outcomes
Dos Santos-Neto LL, de Vilhena Toledo MA, Medeiros-Souza P, de Souza GA. The use of herbal medicine in Alzheimer's disease-a systematic review. Evidence-Based Complementary & Alternative Medicine: eCAM. 2006;3(4):441-5.	Ineligible study design
Droogsma E, van Asselt D, van Steijn J, Veeger N, van Dusseldorp I, De Deyn PP. Nutritional interventions in community-dwelling Alzheimer patients with (risk of) undernutrition: A systematic review. Int Psychogeriatr. 2014;26(9):1445-53.	Ineligible study design
Dugmore O, Orell M, Spector A. Qualitative studies of psychosocial interventions for dementia: a systematic review. Aging Ment Health. 2015;19(11):955-67.	Ineligible study design
Egan M, Hobson S, Fearing VG. Dementia and occupation: A review of the literature. Canadian Journal of Occupational Therapy / Revue Canadienne D'Ergotherapie. 2006;73(3):132-40.	Ineligible study design
Eggermont L, Swaab D, Luiten P, Scherder E. Exercise, cognition and Alzheimer's disease: More is not necessarily better. Neurosci Biobehav Rev. 2006;30(4):562-75.	Ineligible study design
Eggermont LHP, Scherder EJA. Physical activity and behaviour in dementia: a review of the literature and implications for psychosocial intervention in primary care. Dementia. 2006;5(3):411-28.	Ineligible study design
Elder GJ, Taylor JP. Transcranial magnetic stimulation and transcranial direct current stimulation: treatments for cognitive and neuropsychiatric symptoms in the neurodegenerative dementias? Alzheimers Res Ther. 2014;6(9):74.	Ineligible study design
Ernst E, Posadzki P, Lee MS. Reflexology: an update of a systematic review of randomised clinical trials. Maturitas. 2011;68(2):116-20.	Ineligible patient population

Publication reference	Reason for exclusion
Evans N, Carey-Smith B, Orpwood R. Using smart technology in an enabling way: A review of using technology to support daily life for a tenant with moderate dementia. Br J Occup Ther. 2011;74(5):249-53.	Ineligible study design
Farias GA, Guzman-Martinez L, Delgado C, Maccioni RB. Nutraceuticals: A novel concept in prevention and treatment of Alzheimer's disease and related disorders. J Alzheimers Dis. 2014;42(2):357-67.	Ineligible study design
Farina N, Rusted J, Tabet N. The effect of exercise interventions on cognitive outcome in Alzheimer's disease: a systematic review. Int Psychogeriatr. 2014;26(1):9-18.	Duplicate
Farrand P, Matthews J, Dickens C, Anderson M, Woodford J. Psychological interventions to improve psychological well-being in people with dementia or mild cognitive impairment: systematic review and meta-analysis protocol. BMJ Open. 2016;6(1):e009713.	Ineligible outcomes
Faucounau V, Wu YH, Boulay M, De Rotrou J, Rigaud AS. Cognitive intervention programmes on patients affected by Mild Cognitive Impairment: a promising intervention tool for MCI? J Nutr Health Aging. 2010;14(1):31-5.	Ineligible study design
Filan SL, Llewellyn-Jones RH. Animal-assisted therapy for dementia: a review of the literature. Int Psychogeriatr. 2006;18(4):597-611.	Ineligible study design
Fitzpatrick-Lewis D, Warren R, Ali MU, Sherifali D, Raina P. Treatment for mild cognitive impairment: a systematic review and meta-analysis. CMAJ Open. 2015;3(4):E419-27.	Ineligible patient population
Fleming R, Sum S. Empirical studies on the effectiveness of assistive technology in the care of people with dementia: a systematic review. J Assist Technol. 2014;8(1):14-34.	Insufficient / irrelevant information
Flynn R, Roach P. Animal-assisted therapy in dementia care: a critical appraisal of evidence. J Dement Care. 2014;22(4):32-35.	Ineligible outcomes
Forbes D, Blake C, Thiessen E, Peacock S, Hawranik P. Light therapy for improving cognitive, sleep, functional, behavioural or mood disturbances in dementia: A cochrane review. Alzheimers Dement. 2013;9(4 SUPPL. 1):P661-P62.	Insufficient / irrelevant information
Forbes D, Morgan D. Light therapy for managing symptoms of dementia: Promising results. In: McNamara P, editor. Dementia. Volume III: Treatments and Developments. Santa Barbara, CA: Praeger/ABC-CLIO; 2011.	Ineligible patient population
Forbes DA, Culum I, Lischka AR, Morgan DG, Peacock S, Forbes J, et al. Light therapy for managing symptoms of dementia: A cochrane review. Alzheimers Dement. 2009;5(4 SUPPL. 1):408.	Insufficient / irrelevant information
Forbes Scott C, Forbes D, Forbes S, Blake Catherine M, Chong Lee Y, Thiessen Emily J, et al. Exercise interventions for preventing dementia or delaying cognitive decline in people with mild cognitive impairment. Cochrane Database Syst Rev. 2015(5):CD011706.	Ineligible outcomes
Fox B, Hodgkinson B, Parker D. The effects of physical exercise on functional performance, quality of life, cognitive impairment and physical activity levels for older adults aged 65 years and older with a diagnosis of dementia: a systematic review. JBI Database System Rev Implement Rep. 2014;12(9)	Ineligible study design
Fox B, Hodgkinson B. The effects of physical exercise on older adults, aged 65 years and older, with a diagnosis of dementia: A systematic review protocol. JBI Database System Rev Implement Rep. 2013;11(7):414-21.	Ineligible study design
Galante E, Gazzi L, Caffarra S. Psychological activities in neurorehabilitation: from research to clinical practice. G Ital Med Lav Ergon. 2011;33(1 Suppl A):A19-28.	Ineligible study design
Galbraith B, Larkin H, Moorhouse A, Oomen T. Intergenerational programs for persons with dementia: A scoping review. J Gerontol Soc Work. 2015;58(4):357-78.	Ineligible patient population
Gates N, Fiatarone Singh MA, Sachdev PS, Valenzuela M. The effect of exercise training on cognitive function in older adults with mild cognitive impairment: a meta-analysis of randomized controlled trials. Am J Geriatr Psychiatry. 2013;21(11):1086-97.	Ineligible patient population

Publication reference	Reason for exclusion
Gates NJ, Sachdev PS, Fiatarone Singh MA, Valenzuela M. Cognitive and memory training in adults at risk of dementia: a systematic review. BMC Geriatrics. 2011;11:55.	Ineligible patient population
Gauthier S, Schlaefke S. Efficacy and tolerability of Ginkgo biloba extract EGb 761 in dementia: a systematic review and meta-analysis of randomized placebo-controlled trials. Clin Interv Aging. 2014;9:2065-77.	Ineligible patient population
Geng J, Dong J, Ni H, Lee Myeong S, Wu T, Jiang K, et al. Ginseng for cognition. Cochrane Database Syst Rev. 2010(12):CD007769.	Ineligible patient population
George DR, Dangour AD, Smith L, Ruddick J, Vellas B, Whitehouse PJ. The role of nutrients in the prevention and treatment of Alzheimer's disease: methodology for a systematic review. Eur J Neurol. 2009;16 Suppl 1:8-11.	Ineligible outcomes
Giebel C, Challis D. Translating cognitive and everyday activity deficits into cognitive interventions in mild dementia and mild cognitive impairment. Int J Geriatr Psychiatry. 2015;30(1):21-31.	Ineligible study design
Gilhooly KJ, Gilhooly ML, Sullivan MP, McIntyre A, Wilson L, Harding E, et al. A meta-review of stress, coping and interventions in dementia and dementia caregiving. BMC Geriatrics. 2016;16:106.	Ineligible outcomes
Gingerich WJ, Peterson LT. Effectiveness of solution-focused brief therapy: a systematic qualitative review of controlled outcomes studies. Res Soc Work Pract. 2013;23(3):266-83.	Ineligible patient population
Glazer H, Greer C, Barrios D, Ochner C, Galvin J, Isaacson R. Evidence on diet modification for Alzheimer's disease and mild cognitive impairment. Neurology. 2014;82(10 Suppl):Abstract.	Ineligible study design
Gonzalez MT, Kirkevold M. Benefits of sensory garden and horticultural activities in dementia care: A modified scoping review. J Clin Nurs. 2014;23(19-20):2698-715.	Ineligible study design
Goodman C, Evans C, Wilcock J, Froggatt K, Drennan V, Sampson E, et al. End of life care for community dwelling older people with dementia: An integrated review. Int J Geriatr Psychiatry. 2010;25(4):329-37.	Ineligible patient population
Gottlieb-Tanaka D, Graf P. Review of creative expression programs for people with dementia. Neurodegener Dis. 2011;8:A460.	Ineligible study design
Grima NA, Pase MP, MacPherson H, Pipingas A. The effects of multivitamins on cognitive performance: A systematic review and meta-analysis. J Alzheimers Dis. 2012;29(3):561-69.	Ineligible patient population
Guetin S, Charras K, Berard A, Arbus C, Berthelon P, Blanc F, et al. An overview of the use of music therapy in the context of Alzheimer's disease: A report of a French expert group. Dementia. 2013;12(5):619-34.	Ineligible study design
Guo XX, Jin HS, Huo L, Zheng J, Zhou XM. Meta-analysis on acupuncture for treatment of dementia. Chinese Acupuncture and Moxibustion. 2008;28(2):140-44.	Non-English language article
Haigh J, Mytton C. Sensory interventions to support the wellbeing of people with dementia: A critical review. Br J Occup Ther. 2016;79(2):120-26.	Ineligible study design
Han JW, Seo JY, So Y, Kim K, Ryu SH, Jeong HG, et al. Physical activity in individuals with dementia or mild cognitive impairment: A meta-analysis study. Alzheimers Dement. 2014;10:P457.	Insufficient / irrelevant information
Han SH, Li H, Liu LT. Therapeutic efficacy assessment of Chinese medicine on mild cognitive impairment. Chin J Integr Med. 2011;31(5):608-17.	Non-English language article
Hauer K, Becker C, Lindemann U, Beyer N. Effectiveness of physical training on motor performance and fall prevention in cognitively impaired older persons: A systematic review. Am J Phys Med Rehabil. 2006;85(10):847-57.	Ineligible study design
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Henry ML, Beeson PM, Rapcsak SZ. Treatment for anomia in semantic dementia. Semin Speech Lang. 2008;29(1):60-70.	Ineligible study design
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Hernandez SSS, Sandreschi PF, da Silva FC, Arancibia BAV, da Silva R, Gutierres PJB, et al. What are the benefits of exercise for Alzheimer's disease? A systematic review of the past 10 years. J Aging Phys Act. 2015;23(4):659-68.	Insufficient / irrelevant information
Herrmann N, Gauthier S. Diagnosis and treatment of dementia: 6. Management of severe Alzheimer disease. Can Med Assoc J. 2008;179(12):1279-87.	Ineligible study design
Heyn PC, Johnson KE, Kramer AF. Endurance and strength training outcomes on cognitively impaired and cognitively intact older adults: a meta-analysis. J Nutr Health Aging. 2008;12(6):401-9.	Ineligible study design
Hill A, Brettle A. Counseling Older People: What Can We Learn from Research Evidence? J Soc Work Pract. 2006;20(3):281-97.	Ineligible study design
Hill K, Oakley-Browne C, Burton E, Cavalheri V, Meggetto L, Campbell B, et al. Implementing a falls prevention pathway for people with dementia: Translating evidence into practice. Physio. 2015;101:eS564-eS65.	Ineligible study design
Hogervorst E, Yaffe K, Richards M, Huppert FA. Hormone replacement therapy to maintain cognitive function in women with dementia. Cochrane Database Syst Rev. 2009:CD003799.	Ineligible intervention
Hong YJ, Jang EH, Hwang J, Roh JH, Lee JH. The Efficacy of Cognitive Intervention Programs for Mild Cognitive Impairment: A Systematic Review. Curr Alzheimer Res. 2015;12(6):527-42.	Ineligible patient population
Hopper T, Bourgeois M, Pimentel J, Dean Qualls C, Hickey E, Frymark T, et al. An evidence-based systematic review on cognitive interventions for individuals with dementia. Am J Speech Lang Pathol. 2013;22(1):126-45.	Insufficient / irrelevant information
Hort J, O'Brien JT, Gainotti G, Pirttila T, Popescu BO, Rektorova I, et al. EFNS guidelines for the diagnosis and management of Alzheimer's disease. Eur J Neurol. 2010;17(10):1236-48.	Ineligible study design
Huckans M, Hutson L, Twamley E, Jak A, Kaye J, Storzbach D. Efficacy of cognitive rehabilitation therapies for mild cognitive impairment (MCI) in older adults: Working toward a theoretical model and evidence-based interventions. Neuropsychol Rev. 2013;23(1):63-80.	Ineligible patient population
Hugel HM, Jackson N, May BH, Xue CCI. Chinese herbs for dementia diseases. Mini Rev Med Chem. 2012;12(5):371-79.	Ineligible study design
Ihl R. Effects of Ginkgo biloba extract EGb 761 in dementia with neuropsychiatric features: Review of recently completed randomised, controlled trials. Int J Psychiatry Clin Pract. 2013;17(Suppl 1):8-14.	Ineligible study design
Isaac MG, Quinn R, Tabet N. Vitamin E for Alzheimer's disease and mild cognitive impairment. Cochrane Database Syst Rev. 2008(3):CD002854.	Ineligible study design
Itua I, Naderali EK. Review: Omega-3 and memory function: To eat or not to eat. Am J Alzheimers Dis Other Demen. 2010;25(6):479-82.	Ineligible study design
Jain S, Mills P. Biofield therapies: helpful or full of hype? A best evidence synthesis. Int J Behav Med. 2010;17(1):1-16.	Ineligible study design
Jakel A, von Hauenschild P. A systematic review to evaluate the clinical benefits of craniosacral therapy. Complement Ther Med. 2012;20(6):456-65.	Ineligible patient population
Jansen S, Forbes D, Duncan V, DG. M, Malouf R. Melatonin for the treatment of dementia. Cochrane Database Syst Rev. 2006(1):CD003802.	Ineligible intervention
Jansen SL, Forbes D, Duncan V, Morgan DG, Malouf R. Melatonin for cognitive impairment. Cochrane Database Syst Rev. 2006;Jan 25(1):CD003802.	Ineligible intervention
Jensen LE, Padilla R. Effectiveness of Interventions to Prevent Falls in People With Alzheimer's Disease and Related Dementias. Am J Occup Ther. 2011;65(5):532-40.	Ineligible study design
Jimenez-Palomares M, Rodriguez-Mansilla J, Gonzalez-Lopez-Arza MV, Rodriguez-Dominguez MT, Prieto-Tato M. Benefits of music therapy as therapy	Non-English language article

Publication reference	Reason for exclusion
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Johnson M, Feng L. Communication Difficulty and Relevant Interventions in Mild Cognitive Impairment: Implications for Neuroplasticity. TGR. 2014;30(1):18-34.	Ineligible patient population
Jokel R, Graham NL, Rochon E, Leonard C. Word retrieval therapies in primary progressive aphasia. Aphasiology. 2014;28(8-9):1038-68.	Ineligible study design
Kalbe E, Folkerts AK. [Cognitive Training in Parkinson's Disease - A New Therapy Option?]. Fortschr Neurol Psychiatr. 2016;84(Suppl 1):S24-35.	Ineligible patient population
Kamioka H, Kuroyanagi R, Komatsu T, Kaminai T, Takahashi M, Mutoh Y, et al. A systematic review of randomized controlled trials on the therapeutic and health-promoting effects of spas. J Jpn Soc Balneol Climatol Phys Med. 2006;69(3):155-66.	Ineligible patient population
Karkou V, Meekums B. Dance movement therapy for dementia. Cochrane Database Syst Rev. 2014(3):CD011022.	Ineligible outcomes
Kasper S. Phytopharmaceutical treatment of anxiety, depression, and dementia in the elderly: evidence from randomized, controlled clinical trials. Wien Med Wochenschr. 2015;165(11-12):217-28.	Ineligible study design
Kazer MW, Murphy K. Nursing Case Studies on Improving Health-Related Quality of Life in Older Adults. New York, NY: Springer Publishing Company; 2015.	Ineligible study design
Kearney F, Harwood RH, Gladman JR, Lincoln N, Masud T. Cognitively Enhancing Medications for Treatment of Gait and Balance Impairments in Older Adults Through Modulation of Cognition, Attention or Executive Function: A Systematic Review. Age Ageing. 2014;43(suppl_2):ii11.	Ineligible intervention
Keast K, Leskovar C, Brohm R. A systematic review of spirituality and dementia in LTC. Ann Longterm Care. 2010;18(10):41-47.	Ineligible study design
Khosravi P, Ghapanchi AH. Investigating the effectiveness of technologies applied to assist seniors: A systematic literature review. Int J Med Inf. 2016;85(1):17-26.	Ineligible study design
Kiepe MS, Keil T. Systematic review of the effects of dance therapy on mental and physical illnesses. Eur J Integr Med. 2010;2(4):260-61.	Insufficient / irrelevant information
Kim ES, Cleary SJ, Hopper T, Bayles KA, Mahendra N, Azuma T, et al. Evidence-based practice recommendations for working with individuals with dementia: group reminiscence therapy. J Med Speech Lang Path. 2006;14(3):xxiii-xxxiv.	Ineligible study design
Kim EY, Hwang SD, Kim EJ. [Stimulation-Oriented Interventions for Behavioral Problems among People with Dementia: A Systematic Review and Meta-Analysis]. J Korean Acad Nurs. 2016;46(4):475-89.	Non-English language article
Kim K, Han JW, Kim YJ, Park JH, Lee SB, Lee JJ, et al. Cognitive stimulation as a therapeutic modality for early dementia and mild cognitive impairment: A meta-analysis study. Alzheimers Dement. 2014;10:P602.	Insufficient / irrelevant information
Kim K, Han JW, Seo YSJ, Kim YJ, Lee KN, Jiang HL, et al. Reality orientation as a therapeutic modality for dementia and mild cognitive impairment: A meta-analysis study. Int Psychogeriatr. 2013;25:S187.	Non-English language article
Kim SY, Yoo EY, Jung MY, Park SH, Park JH. A systematic review of the effects of occupational therapy for persons with dementia: a meta-analysis of randomized controlled trials. NeuroRehabilitation. 2012;31(2):107-15.	Ineligible study design
Korczak D, Habermann C, Braz S. The effectiveness of occupational therapy for persons with moderate and severe dementia. GMS Health Technol Assess. 2013;9(9):1-103.	Non-English language article
Krause D, Roupas P. Effect of Vitamin Intake on Cognitive Decline in Older Adults: Evaluation of the Evidence. J Nutr Health Aging. 2015;19(7):745-53.	Ineligible patient population
Kverno KS, Black BS, Nolan MT, Rabins PV. Research on treating neuropsychiatric symptoms of advanced dementia with non-pharmacological	Ineligible patient population

Publication reference	Reason for exclusion
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Lai C, Yeung Jonas H, Mok V, Chi I. Special care units for dementia individuals with behavioural problems. Cochrane Database Syst Rev. 2009(4):CD006470.	Ineligible patient population
Lam FMH, Huang MZ, Liao LR, Pang MYC. The effects of exercise on physical health in people with cognitive impairments: A systematic review. Physio. 2015;101:eS811-eS12.	Insufficient / irrelevant information
Langa KM, Levine DA. The diagnosis and management of mild cognitive impairment: a clinical review. JAMA. 2014;312(23):2551-61.	Ineligible study design
Langenbahn DM, Ashman T, Cantor J, Trott C. An evidence-based review of cognitive rehabilitation in medical conditions affecting cognitive function. Arch Phys Med Rehabil. 2013;94(2):271-86.	Insufficient / irrelevant information
Latchem JM, Greenhalgh J. The role of reading on the health and well-being of people with neurological conditions: a systematic review. Aging Ment Health. 2014;18(6):731-44.	Ineligible study design
Lauriks S, Reinersmann A, Van der Roest HG, Meiland FJ, Davies RJ, Moelaert F, et al. Review of ICT-based services for identified unmet needs in people with dementia. Ageing Res Rev. 2007;6(3):223-46.	Ineligible study design
Laver K, Clemson L, Bennett S, Lannin NA, Brodaty H. Unpacking the Evidence: Interventions for Reducing Behavioral and Psychological Symptoms in People with Dementia. Phys Occup Ther Geriatr. 2014;32(4):294-309.	Ineligible outcomes
Laver K, Dyer S, Whitehead C, Clemson L, Crotty M. Interventions to delay functional decline in people with dementia: a systematic review of systematic reviews. BMJ Open. 2016;6(4):e010767.	Ineligible study design
Lawrence V, Fossey J, Ballard C, Moniz-Cook E, Murray J. Improving quality of life for people with dementia in care homes: making psychosocial interventions work. Br J Psychiatry. 2012;201(5):344-51.	Ineligible study design
Laws KR, Adlington RL, Gale TM, Moreno-Martinez FJ, Sartori G. A meta-analytic review of category naming in Alzheimer's disease. Neuropsychologia. 2007;45(12):2674-82.	Ineligible patient population
Lazar A, Thompson H, Demiris G. A Systematic Review of the Use of Technology for Reminiscence Therapy. Health Educ Behav. 2014;41(1):51S-61S.	Ineligible study design
Lee J, Thyer BA. Does music therapy improve mental health in adults? A review. J Hum Behav Soc Environ. 2013;23(5):591-603.	Ineligible patient population
Lee MS, Choi J, Posadzki P, Ernst E. Aromatherapy for health care: An overview of systematic reviews. Maturitas. 2012;71(3):257-60.	Ineligible study design
Lee Y, Back JH, Kim J, Kim SH, Na DL, Cheong HK, et al. Systematic review of health behavioral risks and cognitive health in older adults. Int Psychogeriatr. 2010;22(2):174-87.	Ineligible outcomes
Letts L, Edwards M, Berenyi J, Moros K, O'Neill C, O'Toole C, et al. Using Occupations to Improve Quality of Life, Health and Wellness, and Client and Caregiver Satisfaction for People With Alzheimer's Disease and Related Dementias. Am J Occup Ther. 2011;65(5):497-504.	Ineligible study design
Letts L, Minezes J, Edwards M, Berenyi J, Moros K, O'Neill C, et al. Effectiveness of Interventions Designed to Modify and Maintain Perceptual Abilities in People With Alzheimer's Disease and Related Dementias. Am J Occup Ther. 2011;65(5):505-13.	Ineligible study design
Leung MCP, Yip KK, Lam CT, Lam KS, Lau W, Yu WL, et al. Acupuncture improves cognitive function(A systematic review). Neural Regener Res. 2013;8(18):1673-84.	Ineligible patient population
Lewis N. Review of Memory and communication aids for people with dementia. Dementia. 2015;14(4):548-49.	Ineligible study design
Li HC, Wang HH, Chou FH, Chen KM. The Effect of Music Therapy on Cognitive Functioning Among Older Adults: A Systematic Review and Meta-Analysis. J Am Med Dir Assoc. 2015;16(1):71-77.	Ineligible patient population

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Li R, Liu KP. The use of errorless learning strategies for patients with Alzheimer's disease: a literature review. Int J Rehabil Res. 2012;35(4):292-8.	Ineligible study design
Lima-Silva TB, Bahia VS, Nitrini R, Yassuda MS. Functional status in behavioral variant frontotemporal dementia: a systematic review. Biomed Res Int. 2013:837120-20.	Ineligible study design
Lindbergh CA, Dishman RK, Miller LS. Functional Disability in Mild Cognitive Impairment: A Systematic Review and Meta-Analysis. Neuropsychol Rev. 2016;26(2):129-59.	Ineligible patient population
Liu AY, Rajji TK, Blumberger DM, Daskalakis ZJ, Mulsant BH. Brain stimulation in the treatment of late-life severe mental illness other than unipolar nonpsychotic depression. Am J Geriatr Psychiatry. 2014;22(3):216-40.	Ineligible study design
Mahendra N, Hopper T, Bayles KA, Azuma T, Cleary S, Kim E. Evidence-based practice recommendations for working with individuals with dementia: Montessori-based interventions. J Med Speech Lang Path. 2006;14(1):xv-xxv.	Ineligible study design
Mahendra N, Hopper T, Bayles KA, Azuma T, Cleary S, Kim S. ANCDS bulletin board. Evidence-based practice recommendations for working with individuals with dementia: Montessori-based interventions. J Med Speech Lang Path. 2006;14(1):xv-xxv.	Ineligible study design
Manikam R. Review of Assistive Technologies for People with Diverse Abilities. J Child Fam Stud. 2014;23(7):1310-12.	Ineligible study design
Manzine PR, Pavarini SCI. Cognitive rehabilitation: Literature review based on levels of evidence. Dement Neuropsychol. 2009;3(3):248-55.	Ineligible study design
Manzine PR, Pavarini SCI. The cognitive rehabilitation's concept: literature review based on levels of evidence. Evidentia. 2011;8(33)	Ineligible outcomes
Marciniak R, Sheardova K, Cermakova P, Hudecek D, Sumec R, Hort J. Effect of meditation on cognitive functions in context of aging and neurodegenerative diseases. Front Behav Neurosci. 2014;8:17.	Ineligible study design
Martin S, Kelly G, Kernohan WG, McCreight B, Nugent C. Smart home technologies for health and social care support. Cochrane Database Syst Rev. 2008;Oct 8(4):CD006412.	Ineligible study design
Matheson KY, Simpson SA, Heemskerk AW, Hamilton A. Speech and language therapy in Huntington's disease: Literature review. Clin Genet. 2009;76:117.	Ineligible study design
Matsuda Y, Kishi T, Shibayama H, Iwata N. Yokukansan in the treatment of behavioral and psychological symptoms of dementia: a systematic review and meta-analysis of randomized controlled trials. Hum Psychopharmacol. 2013;28(1):80-6.	Ineligible patient population
Matsuda Y, Kishi T, Shibayama H, Iwata N. Yokukansan in the treatment of behavioural and psychological symptoms of dementia. Eur Neuropsychopharmacol. 2013;23:S541.	Ineligible outcomes
Matsunaga S, Kishi T, Iwata N. Tsoi KK et al: Combination Therapy Showed Limited Superiority Over Monotherapy for Alzheimer Disease: A Meta-analysis of 14 Randomized Trials [letter to the editor]. J Am Med Dir Assoc. 2016;17(11):1061-62.	Ineligible intervention
Matsunaga S, Kishi T, Iwata N. Yokukansan in the Treatment of Behavioral and Psychological Symptoms of Dementia: An Updated Meta-Analysis of Randomized Controlled Trials. J Alzheimers Dis. 2016;54(2):635-43.	Ineligible patient population
McClam TD, Marano CM, Rosenberg PB, Lyketsos CG. Interventions for neuropsychiatric symptoms in neurocognitive impairment due to Alzheimer's disease: A review of the literature. Harv Rev Psychiatry. 2015;23(5):377-93.	Ineligible outcomes
Meagher LJ, Ilchef R, Silberstein P, Cook RJ, Wasson D, Malhi GS. Psychiatric morbidity in patients with Parkinson's disease following bilateral subthalamic deep brain stimulation: Literature review. Acta Neuropsychiatr. 2008;20(4):182-92.	Ineligible study design
Meredith P. Review of Occupational therapy evidence in practice for mental health. Int J Disabil Dev Ed. 2010;57(1):122-24.	Ineligible study design

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Metzler-Baddeley C. A review of cognitive impairments in dementia with Lewy bodies relative to Alzheimer's disease and Parkinson's disease with dementia. Cortex: A Journal Devoted to the Study of the Nervous System and Behavior. 2007;43(5):583-600.	Ineligible study design
Middleton EL, Schwartz MF. Errorless learning in cognitive rehabilitation: A critical review. Neuropsychol Rehabil. 2012;22(2):138-68.	Ineligible study design
Miller KJ, et a. Effectiveness and feasibility of virtual reality and gaming system use at home by older adults for enabling physical activity to improve health-related domains: a systematic review. Age Ageing. 2014;43(2):188-95.	Ineligible patient population
Mitchell G, McCormack B, McCance T. Therapeutic use of dolls for people living with dementia: A critical review of the literature. Dementia. 2016;15(5):976-1001.	Ineligible study design
Moon H, Adams KB. The effectiveness of dyadic interventions for people with dementia and their caregivers. Dementia. 2013;12(6):821-39.	Ineligible patient population
Moos I, Bjorn A. Use of the Life Story in the Institutional Care of People with Dementia: A Review of Intervention Studies. Ageing Soc. 2006;26(3):431-54.	Ineligible study design
Moos I, BjÖRn A. Use of the life story in the institutional care of people with dementia: a review of intervention studies. Ageing Soc. 2006;26(3):431-54.	Ineligible study design
Moyle W, Olorenshaw R, Wallis M, Borbasi S. Best practice for the management of older people with dementia in the acute care setting: A review of the literature. Int J Older People Nurs. 2008;3(2):121-30.	Ineligible intervention
Nascimento Dourado MC, Laks J. Psychological interventions for neuropsychiatric disturbances in mild and moderate Alzheimer's disease: Current evidences and future directions. Curr Alzheimer Res. 2016;13(10):1100-11.	Ineligible outcomes
Nehen HG, Hermann DM. Supporting dementia patients and their caregivers in daily life challenges: Review of physical, cognitive and psychosocial intervention studies. Eur J Neurol. 2015;22(2):246-54.	Ineligible study design
Neville CC, Byrne GJ. The impact of residential respite care on the behaviour of older people with dementia: literature review. Int J Older People Nurs. 2007;2(1):2-8.	Ineligible study design
Ngo J, Holroyd-Leduc JM. Systematic review of recent dementia practice guidelines. Age Ageing. 2015;44(1):25-33.	Ineligible study design
Nguyen Q, Paton C. The use of aromatherapy to treat behavioural problems in dementia (Structured abstract). Int J Geriatr Psychiatry. 2008;23(4):337-46.	Ineligible study design
Nocon M, Roll S, Schwarzbach C, Vauth C, Greiner W, Willich SN. Nursing concepts for patients with dementia: A Systematic review. Z Gerontol Geriatr. 2010;43(3):183-89.	Non-English language article
Nyman SR, Szymczynska P. Meaningful activities for improving the wellbeing of people with dementia: beyond mere pleasure to meeting fundamental psychological needs. PHH. 2016;136(2):99-107.	Ineligible study design
O'Connor DW, Ames D, Gardner B, King M. Psychosocial treatments of behavior symptoms in dementia: a systematic review of reports meeting quality standards. Int Psychogeriatr. 2009;21(2):225-40.	Ineligible outcomes
O'Connor DW, Ames D, Gardner B, King M. Psychosocial treatments of psychological symptoms in dementia: a systematic review of reports meeting quality standards. Int Psychogeriatr. 2009;21(2):241-51.	Ineligible patient population
Oliveira AMd, Radanovic M, Mello PCHd, Buchain PC, Vizzotto ADB, Celestino DL, et al. Nonpharmacological Interventions to Reduce Behavioral and Psychological Symptoms of Dementia: A Systematic Review. Biomed Res Int. 2015;2015:1-9.	Ineligible patient population
Oltra-Cucarella J, Perez-Elvira J, Espert R, McCormick AS. Erratum to Are cognitive interventions effective in alzheimer's disease? A controlled meta-analysis of the effects of bias , [Neuropsychology, (2016)] DOI: 10.1037/neu0000283. Neuropsychology. 2016;30(5):652.	Ineligible study design

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Oltra-Cucarella J, Perez-Elvira R, Espert R, Sohn McCormick A. Are cognitive interventions effective in Alzheimer's disease? A controlled meta-analysis of the effects of bias. Neuropsychology. 2016;30(5):631-52.	Ineligible study design
Ooi CP, Yassin Z, Tengku-Aizan H, Loke SC. Carbohydrates for improving the cognitive performance of independent-living older adults with normal cognition or mild cognitive impairment. Cochrane Database Syst Rev. 2008(3):CD007220.	Ineligible patient population
Orgeta V, KR. M, Poliakoff E, Hindle John V, Clare L, Leroi I. Cognitive training interventions for dementia and mild cognitive impairment in Parkinson?s Disease. Cochrane Database Syst Rev. 2015(11):CD011961.	Ineligible outcomes
Ost L-G. Efficacy of the third wave of behavioral therapies: a systematic review and meta-analysis. Behav Res Ther. 2008;46(3):296-321.	Ineligible patient population
Overshott R, Burns A. Non-pharmacological Treatment of Severe Dementia: An Overview. In: Burns A, editor. Severe Dementia: Wiley Online Library; 2006.	Ineligible patient population
Padilla R. Effectiveness of Environment-Based Interventions for People With Alzheimer's Disease and Related Dementias. Am J Occup Ther. 2011;65(5):514-22.	Ineligible study design
Padilla R. Effectiveness of Interventions Designed to Modify the Activity Demands of the Occupations of Self-Care and Leisure for People With Alzheimer's Disease and Related Dementias. Am J Occup Ther. 2011;65(5):523-31.	Ineligible study design
Payne C, Wiffen PJ, Martin S. Interventions for fatigue and weight loss in adults with advanced progressive illness. Cochrane Database Syst Rev. 2012(1):CD008427.	Ineligible patient population
Pearce R. Sensory stimulation activities. Ageing Health. 2016;20:4-8.	Ineligible study design
Perkins J, Bartlett H, Travers C, Rand J. Dog-assisted therapy for older people with dementia: A review. Australas J Ageing. 2008;27(4):177-82.	Ineligible study design
Perry M, et a. Effects of educational interventions on primary dementia care: a systematic review. Int J Geriatr Psychiatry. 2011;26(1):1-11.	Ineligible patient population
Phillips JL, West PA, Davidson PM, Agar M. Does case conferencing for people with advanced dementia living in nursing homes improve care outcomes: evidence from an integrative review? (Provisional abstract). Int J Nurs Stud. 2013;50(8):1122-35.	Ineligible patient population
Pieper MJ, van Dalen-Kok AH, Francke AL, van der Steen JT, Scherder EJ, Husebo BS, et al. Interventions targeting pain or behaviour in dementia: a systematic review. Ageing Res Rev. 2013;12(4):1042-55.	Ineligible patient population
Pieramico V, Esposito R, Cesinaro S, Frazzini V, Sensi SL. Effects of non-pharmacological or pharmacological interventions on cognition and brain plasticity of aging individuals. Front Syst Neurosci. 2014;8:153.	Ineligible study design
Plemel JR, Juzwik CA, Benson CA, Monks M, Harris C, Ploughman M. Over-the-counter anti-oxidant therapies for use in multiple sclerosis: A systematic review. MS J. 2015;21(12):1485-95.	Ineligible study design
Pludowski P, Holick MF, Pilz S, Wagner CL, Hollis BW, Grant WB, et al. Vitamin D effects on musculoskeletal health, immunity, autoimmunity, cardiovascular disease, cancer, fertility, pregnancy, dementia and mortality-a review of recent evidence. Autoimmun Rev. 2013;12(10):976-89.	Ineligible study design
Posadzki P, Ernst E, Lee MS. Complementary and alternative medicine for Alzheimer's disease: An overview of systematic reviews. Focus Altern Comple. 2012;17(4):186-91.	Ineligible study design
Pothoulaki M, MacDonald R, Flowers P. The use of music in chronic illness: Evidence and arguments. In: MacDonald R, Kreutz G, Mitchell L, editors. Music, Health, and Wellbeing. New York, NY: Oxford University Press; US; 2012. p. 239-56.	Ineligible patient population
Potter CL, Scott A. Music therapy for the treatment of behavioural and psychological symptoms of dementia: A systematic literature review. Eur Psychiatry. 2012;27:P-459.	Ineligible patient population

Publication reference	Reason for exclusion
Preschl B, Wagner B, Forstmeier S, Maercker A. E-health interventions for depression, anxiety disorder, dementia, and other disorders in older adults: A review. J Cyber Ther Rehabil. 2011;4(3):371-85.	Ineligible study design
Prizer LP, Browner N. The integrative care of Parkinson's disease: a systematic review. J Parkinsons Dis. 2012;2(2):79-86.	Ineligible study design
Quinn C, Toms G, Anderson D, Clare L. Self-management group interventions for people with MCI or dementia: A systematic review. Alzheimers Dement. 2014;10:P769.	Ineligible study design
Raglio A, Bellelli G, Mazzola P, Bellandi D, Giovagnoli AR, Farina E, et al. Music, music therapy and dementia: A review of literature and the recommendations of the Italian Gsychogeriatric Association. Maturitas. 2012;72(4):305-10.	Ineligible study design
Randall EW, Clissett PC. What are the relative merits of interventions used to reduce the occurrences of disruptive vocalisation in persons with dementia? - a systematic review. Int J Older People Nurs. 2016;11(1):4-17.	Ineligible patient population
Reagon C, Gale N, Enright S, Mann M, van Deursen R. A mixed-method systematic review to investigate the effect of group singing on health related quality of life. Complement Ther Med. 2016;27:1-11.	Ineligible patient population
Regan B, Varanelli L. Adjustment, depression, and anxiety in mild cognitive impairment and early dementia: a systematic review of psychological intervention studies. Int Psychogeriatr. 2013;25(12):1963-84.	Ineligible outcomes
Reilly S, et a. Case management approaches to home support for people with dementia (review). Hoboken, NJ: John Wiley & Sons Ltd; 2015.	Ineligible intervention
Rennie G, Chen AC, Dhillon H, Vardy J, Damian DL. Nicotinamide and neurocognitive function. Nutr Neurosci. 2015;18(5):193-200.	Ineligible study design
Research In Practice For Adults. Reminiscence therapy for people with dementia. Digital Media. Dartington: Research In Practice For Adults; 2007. Available from: http://www.scie-socialcareonline.org.uk/reminiscence-therapy-for-people-with-dementia/r/a11G00000017x9uIAA.	Ineligible study design
Resnick B, Beaupre L, McGilton KS, Galik E, Liu W, Neuman MD, et al. Rehabilitation Interventions for Older Individuals With Cognitive Impairment Post-Hip Fracture: A Systematic Review. J Am Med Dir Assoc. 2016;17(3):200-5.	Ineligible patient population
Rhodes RE, Temple VA, Tuokko HA. Evidence-based risk assessment and recommendations for physical activity clearance: cognitive and psychological conditions. Appl Physiol Nutr Metab. 2011;36 Suppl 1:S113-53.	Ineligible outcomes
Rodakowski J, Saghafi E, Butters MA, Skidmore ER. Non-pharmacological interventions for adults with mild cognitive impairment and early stage dementia: An updated scoping review. Mol Aspects Med. 2015;43-44:38-53.	Ineligible patient population
Sachdeva A, Kumar K, Anand KS. Non pharmacological cognitive enhancers - Current perspectives. J Clin Diagn Res. 2015;9(7):no pagination.	Ineligible study design
Salawu FK, Umar JT, Olokoba AB. Alzheimer's disease: a review of recent developments. Ann Afr Med. 2011;10(2):73-9.	Ineligible study design
Salisbury K, Algar K, Windle G. Arts programmes and quality of life for people with dementia. J Dement Care. 2011;19(3):33.	Ineligible study design
Sanchez A, Millan-Calenti JC, Lorenzo-Lopez L, Maseda A. Multisensory stimulation for people with dementia: a review of the literature. Am J Alzheimers Dis Other Demen. 2013;28(1):7-14.	Ineligible study design
Santos-Neto LLD, De Vilhena Toledo MA, Medeiros-Souza P, De Souza GA. The use of herbal medicine in Alzheimer's disease - A systematic review. J Evid Based Complementary Altern Med. 2006;3(4):441-45.	Ineligible study design
Savica R, Petersen RC. Prevention of dementia. Psychiatr Clin North Am. 2011;34(1):127-45.	Ineligible study design
Schneider N, Yvon C. A review of multidomain interventions to support healthy cognitive ageing. J Nutr Health Aging. 2013;17(3):252-57.	Ineligible study design
Schnitker L, Martin-Khan M, Beattie E, Gray L. What is the Evidence to Guide Best Practice for the Management of Older People With Cognitive Impairment	Ineligible study design

Publication reference	Reason for exclusion
Presenting to Emergency Departments?: A Systematic Review. Adv Emerg Nurs J. 2013;35(2):154-69.	
Scholzel-Dorenbos CJM, et a. Assessment of quality of life as an outcome in dementia and MCI intervention trials: a systematic review. Alzheimer Dis Assoc Disord. 2007;21(2):172-79.	Ineligible study design
Seitz DP, Brisbin S, Herrmann N, Rapoport MJ, Wilson K, Gill SS, et al. Efficacy and feasibility of nonpharmacological interventions for neuropsychiatric symptoms of dementia in long term care: a systematic review. J Am Med Dir Assoc. 2012;13(6):503-06.e2.	Ineligible patient population
Seo J, Han JW, Kim YSK, Kim YJ, Lee KN, Jiang HL, et al. Snoezelen and multi-sensory stimulation in elderly with dementia or MCI: A meta-analysis study. Int Psychogeriatr. 2013;25:S187-S88.	Insufficient / irrelevant information
Sepehry A, Yang L, Hsiung GYR, Jacova C. Music therapy, global affect and behavior in Alzheimer's disease: A meta-analytic perspective on outcomes and on music therapy methodologies. Alzheimers Dement. 2013;9(4 SUPPL. 1):P665.	Insufficient / irrelevant information
Shah R. The Role of Nutrition and Diet in Alzheimer Disease: A Systematic Review. J Am Med Dir Assoc. 2013;14(6):398-402.	Ineligible study design
Shah RC. Medical foods for Alzheimer's disease. Drugs Aging. 2011;28(6):421-28.	Ineligible study design
Sheppard CL, McArthur C, Hitzig SL. A Systematic Review of Montessori-Based Activities for Persons With Dementia. J Am Med Dir Assoc. 2016;17(2):117-22.	Insufficient / irrelevant information
Shinagawa S, Nakajima S, Plitman E, Graff-Guerrero A, Mimura M, Nakayama K, et al. Non-pharmacological management for patients with frontotemporal dementia: a systematic review. J Alzheimers Dis. 2015;45(1):283-93.	Ineligible study design
Simmons-Mackie N, Savage MC, Worrall L. Conversation therapy for aphasia: A qualitative review of the literature. Int J Lang Commun Disord. 2014;49(5):511-26.	Ineligible study design
Simon SS, Yokomizo J, Balardin JB, Miotto EC, Bottino C. Effects of cognitive training, as measured with fMRI, in mild cognitive impairment: A brief review. Alzheimers Dement. 2013;9(4 SUPPL. 1):P298.	Ineligible study design
Simon SS, Yokomizo JE, Bottino CM. Cognitive intervention in amnestic Mild Cognitive Impairment: a systematic review. Neurosci Biobehav Rev. 2012;36(4):1163-78.	Ineligible study design
Sitzer DI, Twamley EW, Jeste DV. Cognitive training in Alzheimer's disease: a meta-analysis of the literature. Acta Psychiatr Scand. 2006;114(2):75-90.	Ineligible study design
Skingley A, Vella-Burrows T. Therapeutic effects of music and singing for older people. Nurs Stand. 2010;24(19):35-41.	Ineligible study design
Smits CH, Lange J, Droes RM, Meiland F, Vernooij-Dassen M, Pot AM. Effects of combined intervention programmes for people with dementia living at home and their caregivers: a systematic review (Structured abstract). Int J Geriatr Psychiatry. 2007;22(12):1181-93.	Ineligible patient population
Solfrizzi V, Panza F. Plant-based nutraceutical interventions against cognitive impairment and dementia: meta-analytic evidence of efficacy of a standardized Gingko biloba extract. J Alzheimers Dis. 2015;43(2):605-11.	Ineligible study design
Song Y, Lee J, Song A. Meta-analysis about cognitive intervention effect applied to dementia patients. NeuroRehabilitation. 2016;39(2):319-27.	Insufficient / irrelevant information
Sorbi S, Hort J, Erkinjuntti T, Fladby T, Gainotti G, Gurvit H, et al. EFNS-ENS Guidelines on the diagnosis and management of disorders associated with dementia. Eur J Neurol. 2012;19(9):1159-79.	Ineligible study design
Sorbi S. EFNS guidelines on the diagnosis and management of disorders associated with dementia. Eur J Neurol. 2012;19:813.	Ineligible study design
Soril LJ, Leggett LE, Lorenzetti DL, Silvius J, Robertson D, Mansell L, et al. Effective use of the built environment to manage behavioural and psychological symptoms of dementia: a systematic review. PLOS ONE. 2014;9(12):e115425.	Ineligible patient population

Publication reference	Reason for exclusion
Steeman E, de Casterlé BD, Godderis J, Grypdonck M. Living with early-stage dementia: a review of qualitative studies. J Adv Nurs. 2006;54(6):722-38.	Ineligible study design
Strydom A, Lee L, Jokinen N, Shooshtari S, Raykar V, Torr J, et al. Dementia in older adults with intellectual disabilities: a report on the state of science on dementia in older adults with intellectual disabilities by the IASSID Special Interest Research Group on Ageing and Intellectual Disabilities. Canterbury: International Association for the Scientific Study of Intellectual Disabilities; 2009. Available from: http://www.opadd.on.ca/News/documents/dementiaIASSID.report.pdf.	Ineligible study design
Tadros G, Ormerod S, Dobson-Smyth P, Gallon M, Doherty D, Carryer A, et al. The management of behavioural and psychological symptoms of dementia in residential homes: Does Tai Chi have any role for people with dementia? Dementia. 2013;12(2):268-79.	Ineligible study design
Tan D, Hong S, Koh A. Effectiveness of rehabilitation in adults with Parkinson plus syndromes: A systematic review. Mov Disord. 2013;28:S290.	Insufficient / irrelevant information
Tang HY, Vezeau T. The use of music intervention in healthcare research: a narrative review of the literature. J Nurs Res. 2010;18(3):174-90.	Ineligible study design
Tavares BB, Moraes H, Deslandes AC, Laks J. Impact of physical exercise on quality of life of older adults with depression or Alzheimer's disease: a systematic review. Trends Psychiatry Psychother. 2014;36(3):134-9.	Insufficient / irrelevant information
Taylor TL. A systematic review of the international published literature relating to quality of institutional care for people with longer term mental health problems. BMC Psychiatry. 2009;9(55)	Ineligible patient population
Teixeira CVL, Gobbi LTB, Corazza DI, Stella F, Costa JLR, Gobbi S. Non-pharmacological interventions on cognitive functions in older people with mild cognitive impairment (MCI). Arch Gerontol Geriatr. 2012;54(1):175-80.	Ineligible study design
Testad I, Corbett A, Aarsland D. The value of personalized psychosocial interventions to address behavioral and psychological symptoms in people with dementia living in care home settings. Int Psychogeriatr. 2014;26(7)	Ineligible outcomes
Thom JM, Clare L. Rationale for combined exercise and cognition-focused interventions to improve functional independence in people with dementia. Gerontology. 2011;57(3):265-75.	Ineligible study design
Thorgrimsen L, Spector A, Orrell M. The use of aromatherapy in dementia care: a review. J Dement Care. 2006;14(2):33-36.	Ineligible study design
Thune-Boyle IC, Iliffe S, Cerga-Pashoja A, Lowery D, Warner J. The effect of exercise on behavioral and psychological symptoms of dementia: towards a research agenda. Int Psychogeriatr. 2012;24(7):1046-57.	Ineligible patient population
Toh HM, Ghazali SE, Subramaniam P. The Acceptability and Usefulness of Cognitive Stimulation Therapy for Older Adults with Dementia: A Narrative Review. Int J Alzheimers Dis. 2016;2016:5131570.	Ineligible study design
Toms GR, Clare L, Nixon J, Quinn C. A systematic narrative review of support groups for people with dementia. Int Psychogeriatr. 2015;27(9):1439-65.	Ineligible study design
Trahan MA, Kuo J, Carlson MC, Gitlin LN. A Systematic Review of Strategies to Foster Activity Engagement in Persons With Dementia. Health Educ Behav. 2014;41(1):70S-83S.	Ineligible study design
Travers C, MacAndrew M, Hines S, O'Reilly M, Fielding E, Beattie E, et al. The effectiveness of meaningful occupation interventions for people living with dementia in residential aged care: A systematic review protocol. JBI Database System Rev Implement Rep. 2015;13(4):87-99.	Ineligible study design
Tricco AC, Soobiah C, Berliner S, Ho JM, Ng CH, Ashoor HM, et al. Efficacy and safety of cognitive enhancers for patients with mild cognitive impairment: a systematic review and meta-analysis. CMAJ. 2013;185(16):1393-401.	Ineligible intervention
Tricco AC, Soobiah C, Lillie E, Perrier L, Chen MH, Hemmelgarn B, et al. Use of cognitive enhancers for mild cognitive impairment: Protocol for a systematic review and network meta-analysis. Syst Rev. 2012;1:25.	Ineligible intervention

Publication reference	Reason for exclusion
Tricco AC, Vandervaart S, Soobiah C, Lillie E, Perrier L, Chen MH, et al. Efficacy of cognitive enhancers for Alzheimer's disease: protocol for a systematic review and network meta-analysis. Syst Rev. 2012;1:31.	Ineligible intervention
Trivedi D, Goodman C, Dickinson A, Gage H, McLaughlin J, Manthorpe J, et al. A protocol for a systematic review of research on managing behavioural and psychological symptoms in dementia for community-dwelling older people: evidence mapping and syntheses. Syst Rev. 2013;2:70.	Ineligible outcomes
Uthman OA, Abdulmalik JO. Adjunctive therapies for AIDS dementia complex. Cochrane Database Syst Rev. 2008;Jul 16(3):CD006496.	Ineligible intervention
van Alphen HJ, Hortobagyi T, van Heuvelen MJ. Barriers, motivators, and facilitators of physical activity in dementia patients: A systematic review. Arch Gerontol Geriatr. 2016;66:109-18.	Ineligible study design
van der Ploeg ES, O'Connor DW. Methodological challenges in studies of bright light therapy to treat sleep disorders in nursing home residents with dementia. Psychiatry Clin Neurosci. 2014;68(11):777-84.	Ineligible study design
Van der Roest H, Wenborn J, Dröes R, Orrell M. Assistive technology for memory support in dementia. Cochrane Database Syst Rev. 2012(2):CD009627.	Ineligible outcomes
Van Der Wardt V, Patel D, Gondek D, Pollock K, Logan P, Das Nair R, et al. Systematic review into motivational strategies that support adherence to exercise for people with mild cognitive impairment (MCI) or dementia. Eur Geriatr Med. 2014;5:S238.	Ineligible intervention
van Hoof J, Kort HSM, van Waarde H, Blom MM. Environmental interventions and the design of homes for older adults with dementia: An overview. Am J Alzheimers Dis Other Demen. 2010;25(3):202-32.	Ineligible study design
van Paasschen J, Clare L, Woods RT, Linden DEJ. Can we change brain functioning with cognition-focused interventions in Alzheimer's disease? The role of functional neuroimaging. Restor Neurol Neurosci. 2009;27(5):473-91.	Ineligible study design
Van Ravensberg D, Van Den Heuvel S, Hobbelen H, Nijhuis-Van Der Sanden R. Effects of physical therapy in nursing home residents-a systematic literature review. Physio. 2011;97:eS1294-eS95.	Ineligible study design
van Wijk N, Broersen LM, de Wilde MC, Hageman RJJ, Groenendijk M, Sijben JWC, et al. Targeting synaptic dysfunction in Alzheimer's disease by administering a specific nutrient combination. J Alzheimers Dis. 2014;38(3):459-79.	Ineligible study design
Van't Leven N, Prick AE, Groenewoud JG, Roelofs PD, Lange J, Pot AM. Dyadic interventions for community-dwelling people with dementia and their family caregivers: a systematic review. Int Psychogeriatr. 2013;25(10):1581-603.	Ineligible patient population
Vasionyte I, Madison G. Musical intervention for patients with dementia: a meta-analysis (Provisional abstract). J Clin Nurs. 2013;22(9-10):1203-16.	Ineligible study design
Vasse E, Vernooij-Dassen M. Psychosocial interventions in dementia care. In: McNamara P, editor. Dementia. Volume III: Treatments and Developments. Santa Barbara, CA: Praeger/ABC-CLIO; 2011.	Ineligible study design
Vernooij-Dassen M, Vasse E, Zuidema S, Cohen-Mansfield J, Moyle W. Psychosocial interventions for dementia patients in long-term care. Int Psychogeriatr. 2010;22(7):1121-28.	Ineligible study design
Virues-Ortega J, Pastor-Barriuso R, Castellote JM, Poblacion A, de Pedro-Cuesta J. Effect of animal-assisted therapy on the psychological and functional status of elderly populations and patients with psychiatric disorders: A meta-analysis. Health Psychology Review. 2012;6(2):197-221.	Ineligible study design
Vitinius F, Imlau C, Albus C. Psychosocial strain and therapeutic approaches of hereditary neurological diseases: A systematic review. J Psychosom Res. 2013;74(6):560.	Insufficient / irrelevant information
von Gunten A, Alnawaqil A, Abderhalden C, Needham I, Schupbach B. Vocally disruptive behavior in the elderly: a systematic review. Int Psychogeriatr. 2008;20(4):653-72.	Ineligible patient population

Publication reference	Reason for exclusion
Wald J. Reviews: When Words have Lost their Meaning: Alzheimer's Patients Communicate through Art. Art Therapy. 2006;23(1):40-41.	Ineligible study design
Wall M, Duffy A. The effects of music therapy for older people with dementia. Br J Nurs. 2010;19(2):108-13.	Ineligible study design
Warner JP, Butler R, Gupta S. Dementia. Clin Evid (Online). 2010; Apr 8: Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2907611/	Ineligible study design
Watson R, Green SM. Feeding and dementia: a systematic literature review. J Adv Nurs. 2006;54(1):86-93.	Ineligible study design
Watts J. The impact of family-style dining in care homes or hospitals. J Dement Care. 2013;21(5):32-35.	Ineligible study design
Wayne PM, Walsh J, Taylor-Piliae R, Wells R, Papp K, Donovan N, et al. The impact of Tai-Chi on cognitive performance in older adults: A systematic review and meta-analysis. J Altern Complement Med. 2014;20(5):A10-A11.	Insufficient / irrelevant information
Werd MM, Boelen D, Olde Rikkert MG, Kessels RP. Errorless learning of everyday tasks in people with dementia. Clin Interv Aging. 2013;8(2):1177-90.	Insufficient / irrelevant information
Westphal A, Dingjan P, Attoe R. What can low and high technologies do for late-life mental disorders? Curr Opin Psychiatry. 2010;23(6):510-15.	Ineligible study design
Whitlatch C. Evidence supporting use of nonpharmacologic interventions for NPS: Where do we go from here? Alzheimers Dement. 2012;8(4 SUPPL. 1):P80.	Insufficient / irrelevant information
Windle G. Does telecare contribute to quality of life and well-being for people with dementia? J Dement Care. 2010;18(5):33-36.	Ineligible study design
Wittwer JE, Webster KE, Hill K. Rhythmic auditory cueing to improve walking in patients with neurological conditions other than Parkinson's disease--what is the evidence? Disabil Rehabil. 2013;35(2):164-76.	Ineligible study design
Wong C, Leland NE. Non-pharmacological approaches to reducing negative behavioral symptoms: A scoping review. OTJR. 2016;36(1):34-41.	Ineligible outcomes
Wood LD, Neumiller JJ, Setter SM, Dobbins EK. Clinical review of treatment options for select nonmotor symptoms of Parkinson's disease. Am J Geriatr Pharmacother. 2010;8(4):294-315.	Ineligible patient population
Xu J, Wang LL, Dammer EB, Li CB, Xu G, Chen SD, et al. Melatonin for Sleep Disorders and Cognition in Dementia: A Meta-Analysis of Randomized Controlled Trials. Am J Alzheimers Dis Other Demen. 2015;30(5):439-47.	Ineligible intervention
Yang Z, Li W, Huang T, Chen J, Zhang X. Meta-analysis of Ginkgo biloba extract for the treatment of Alzheimer's disease. Neural Regener Res. 2011;6(15):1125-29.	Non-English language article
Yi-Hui L, Shu-Ming C, Man-Chun C, Tsuey-Yuan H. The Use of Music Intervention in Nursing Practice for Elderly Dementia Patients: A Systematic Review. J Nurs. 2014;61(2):84-94.	Non-English language article
Yu F, Kolanowski AM, Strumpf NE, Eslinger PJ. Improving Cognition and Function Through Exercise Intervention in Alzheimer's Disease. J Nurs Scholarsh. 2006;38(4):358-65.	Ineligible study design
Yu F, Rose KM, Burgener SC, Cunningham C, Buettner LL, Beattie E, et al. Cognitive training for early-stage Alzheimer's disease and dementia. J Gerontol Nurs. 2009;35(3):23-9.	Ineligible study design
Yue J, Dong Bi R, Lin X, Yang M, Wu Hong M, Wu T. Huperzine A for mild cognitive impairment. Cochrane Database Syst Rev. 2012(12):CD008827.	Ineligible study design
Yuill N, Hollis V. A Systematic Review of Cognitive Stimulation Therapy for Older Adults with Mild to Moderate Dementia: An Occupational Therapy Perspective. Occup Ther Int. 2011;18(4):163-86.	Ineligible study design
Yun C, Abrahamson K. Does Exercise Impact Cognitive Performance in Community-dwelling Older Adults with Mild Cognitive Impairment? A Systematic Review. Qual Prim Care. 2015;23(4):214-22.	Ineligible patient population
Zdanys KF, Carvalho AF, Tampi RR, Steffens DC. The treatment of behavioral and psychological symptoms of dementia: Weighing benefits and risks. Curr Alzheimer Res. 2016;13(10):1124-33.	Ineligible outcomes

Publication reference	Reason for exclusion
Zetteler J. Effectiveness of simulated presence therapy for individuals with dementia. Aging Ment Health. 2008;12(6)	Ineligible outcomes
Zetteler J. Effectiveness of simulated presence therapy for individuals with dementia: a systematic review and meta-analysis. Aging Ment Health. 2008;12(6):779-85.	Ineligible patient population
Zhou J, Peng W, Li W, Liu Z. Acupuncture for patients with Alzheimer's disease: A systematic review protocol. BMJ Open. 2014;4(8):no pagination.	Ineligible outcomes
Zhou Y, Yang M, Chen T, Bi RD. Testosterone supplementation for mild cognitive impairment and dementia. Cochrane Database Syst Rev. 2009(2):CD007728.	Ineligible intervention
Zhu XC, Yu Y, Wang HF, Jiang T, Cao L, Wang C, et al. Physiotherapy intervention in Alzheimer's disease: systematic review and meta-analysis. J Alzheimers Dis. 2015;44(1):163-74.	Ineligible study design
Zielonka J, Reid M, Adelman RD. Therapeutic use of music in dementia patients: Identifying research gaps. J Am Geriatr Soc. 2013;61:S228.	Ineligible study design
Zientz J, Rackley A, Chapman SB, Hopper T, Mahendra N, Cleary S. Evidence-based practice recommendations: Caregiver-administered active cognitive stimulation for individuals with Alzheimer's disease. J Med Speech Lang Pathol. 2007;15(3):xxvii-xxxiv.	Ineligible study design
Ziv G, Lidor R. Music, exercise performance, and adherence in clinical populations and in the elderly: A review. J Clin Sport Psychol. 2011;5(1):1-23.	Ineligible study design

APPENDIX E: Newer RCTs: Published since the eligible systematic reviews

For the eligible systematic reviews included in this report, a list of more recent RCTs was screened to select potentially relevant trials published in or after the year the reviews' searches were run. Any trials published in the same year as the review's searches took place were cross referenced against the included review in order to prevent duplication of studies.

Table E.1: Nutritional Supplements

Review: B Vitamins: (Li 2014 [42]) Searches run April 2014
Chen H, Liu S, Ji L, Wu T, Ji Y, Zhou Y, et al. Folic Acid Supplementation Mitigates Alzheimer's Disease by Reducing Inflammation: A Randomized Controlled Trial. Mediators Inflamm. 2016;2016:Article ID 5912146.
Oulhaj A, Jerneren F, Refsum H, Smith A, Jager C. Omega-3 fatty acid status enhances the prevention of cognitive decline by B Vitamins in mild cognitive impairment. J Alzheimers Dis. 2015;50(2):547-57.
Smith D, Refsum H, Oulhaj A, De Jager CA, Jerneren F. Beneficial interactions between B Vitamins and omega-3 fatty acids in the prevention of brain atrophy and of cognitive decline in early stage alzheimer's disease. FASEB J. 2016;30(Suppl 1):407.6.
Review: Ginseng: (Lee 2009 [72]) Searches ran Jun 2009
Heo JH, Lee ST, Chu K, Oh MJ, Park HJ, Shim JY, et al. Heat-processed ginseng enhances the cognitive function in patients with moderately severe Alzheimer's disease. Nutr Neurosci. 2012;15(6):278-82.
Review: Improving food and drink intake: (Abdelhamid 2016 [38]) No search date specified; used 2015
Liu W. Optimizing eating performance for long-term care residents with dementia. Diss Abstr Int (B). 2016;76(10-B(E)
Liu W, Galik E, Nahm E-S, Boltz M, Resnick B. Optimizing Eating Performance for Long-Term Care Residents With Dementia: Testing the Impact of Function-Focused Care for Cognitively Impaired. J Am Med Dir Assoc. 2015;16(12):1062-68.
Suominen MH, Puranen TM, Jyvakorpi SK, Eloniemi-Sulkava U, Kautiainen H, Siljamaki-Ojansuu U, et al. Nutritional guidance improves nutrient intake and quality of life, and may prevent falls in aged persons with Alzheimer disease living with a spouse (NuAD trial). J Nutr Health Aging. 2015;19(9):901-07.
Review: Omega-3: (Burckhardt 2016 [39]) Searches run Dec 2015
Kato S, Hashimoto M, Ohno M, Kato K, Katakura M, Tanabe Y, et al. Effects of dietary N-3 PUFA intervention on cognitive function and mental health in Japanese oldest-elderly with dementia. Alzheimers Dement. 2015;11(7 SUPPL. 1):P721.
Phillips M, Childs C, Calder P, Rogers P. No Effect of Omega-3 Fatty Acid Supplementation on Cognition and Mood in Individuals with Cognitive Impairment and Probable Alzheimer's Disease: A Randomised Controlled Trial. Int J Mol Sci. 2015;16(10):24600-13.
Review: Vitamin E: (Farina 2012 [44]) Searches run June 2012
Dysken M, Guarino P, Vertrees J, Asthana S, Sano M, Llorente M, et al. Vitamin E and memantine in Alzheimer's disease: clinical trial methods and baseline data. Alzheimers Dement. 2014;10(1):36-44.
Dysken M, Sano M, Asthana S, Vertrees J, Pallaki M, Llorente M, et al. Effect of vitamin E and memantine on functional decline in Alzheimer disease: the TEAM-AD VA cooperative randomized trial. JAMA. 2014;311(1):33-44.
Other recently published nutrition RCTs: 2014 to current
Furukawa K, Tomita N, Uematsu D, Okahara K, Shimada H, Ikeda M, et al. Randomized double-blind placebo-controlled multicenter trial of Yokukansan for neuropsychiatric symptoms in Alzheimer's disease. Geriatr Gerontol Int. 2015:no pagination.

Gu C, Shen T, An H, Yuan C, Zhou J, Ye Q, et al. Combined therapy of Di-Huang-Yi-Zhi with Donepezil in patients with Parkinson's disease dementia. Neurosci Lett. 2015;606:13-17.
Hashimoto M, Kato S, Tanabe Y, Katakura M, Mamun AA, Ohno M, et al. Beneficial effects of dietary docosahexaenoic acid intervention on cognitive function and mental health of the oldest elderly in Japanese care facilities and nursing homes. Geriatr Gerontol Int. 2016:no pagination.
Malpas CB, Vivasha L, Genc S, Saling MM, Desmond P, Steward C, et al. A phase iia randomized control trial of VEL015 (sodium selenate) in mild-moderate Alzheimer's disease. J Alzheimers Dis. 2016;54(1):223-32.
More MI, Freitas U, Rutenberg D. Positive Effects of Soy Lecithin-Derived Phosphatidylserine plus Phosphatidic Acid on Memory, Cognition, Daily Functioning, and Mood in Elderly Patients with Alzheimer's Disease and Dementia. Adv Ther. 2014;31(12):1247-62.
Nolan J, Loskutova E, Howard A, Mulcahy R, Moran R, Stack J, et al. The impact of supplemental macular carotenoids in Alzheimer's disease: a randomized clinical trial. J Alzheimers Dis. 2015;44(4):1157-69.
Remington R, Bechtel C, Larsen D, Samar A, Doshanjh L, Fishman P, et al. A Phase II Randomized Clinical Trial of a Nutritional Formulation for Cognition and Mood in Alzheimer's Disease. J Alzheimers Dis. 2015;45(2):395-405.
Remington R, Lortie J, Hoffmann H, Page R, Morrell C, Shea T. A Nutritional Formulation for Cognitive Performance in Mild Cognitive Impairment: A Placebo-Controlled Trial with an Open-Label Extension. J Alzheimers Dis. 2015;48(3):591-5.
Sadhu A, Upadhyay P, Agrawal A, Ilango K, Karmakar D, Singh G, et al. Management of cognitive determinants in senile dementia of Alzheimer's type: therapeutic potential of a novel polyherbal drug product. Clin Drug Investig. 2014;34(12):857-69.
Tajadini H, Saifadini R, Choopani R, Mehrabani M, Kamalinejad M, Haghdoost A. Herbal medicine Davaie Loban in mild to moderate Alzheimer's disease: A 12-week randomized double-blind placebo-controlled clinical trial. Complement Ther Med. 2015;23(6):767-72.
Wade AG, Farmer M, Harari G, Fund N, Laudon M, Nir T, et al. Add-on prolonged-release melatonin for cognitive function and sleep in mild to moderate Alzheimer's disease: A 6-month, randomized, placebo-controlled, multicenter trial. Clin Interv Aging. 2014;9:947-61.
Zhang Y, Lin C, Zhang L, Cui Y, Gu Y, Guo J, et al. Cognitive improvement during treatment for mild Alzheimer's disease with a Chinese herbal formula: A randomized controlled trial. PLOS ONE. 2015;10(6):e0130353.
Zhu A, Wu Z, Huang Y, Nakanishi H, Wu S. Brazilian propolis improves cognitive functions and regulates serum cytokine balances in patients with mild cognitive impairment at high altitude. Alzheimers Dement. 2014;10:P619-P20.

Table E.2: Cognitive rehabilitation, training and/or stimulation

RCTs published since the date of the searches of the earliest included SR (2012)
Goal-oriented cognitive rehabilitation in early-stage Alzheimer's disease: multi-centre single-blind randomised controlled trial (GREAT) (Project record). HTA Database. 2013; (4): Available from: http://onlinelibrary.wiley.com/o/cochrane/clhta/articles/HTA-32013001073/frame.html
Alves J, Alves-Costa F, Magalhaes R, Goncalves OF, Sampaio A. Cognitive stimulation for Portuguese older adults with cognitive impairment: A randomized controlled trial of efficacy, comparative duration, feasibility, and experiential relevance. Am J Alzheimers Dis Other Demen. 2014;29(6):503-12.
Amieva H, Robert PH, Grandoulier AS, Meillon C, De Rotrou J, Andrieu S, et al. Group and individual cognitive therapies in Alzheimer's disease: The ETNA3 randomized trial. Int Psychogeriatr. 2016;28(5):707-17.
Apostolo J, Gil I, Rosa A, Almeida J, Fernandes A. The effect of cognitive stimulation on cognition in the elderly. Alzheimers Dement. 2013;9(4 SUPPL. 1):P650-P51.
Barban F, Annicchiarico R, Perri R, Fadda L, Carlesimo GA, Pantelopoulos S, et al. Randomized clinical trial of a computer-based cognitive treatment for healthy elderly, clinical and preclincal Alzheimer's disease. the SOCIABLE project. J Alzheimers Dis. 2012;29:101.
Bergamaschi S, Arcara G, Calza A, Villani D, Orgeta V, Mondini S. One-year repeated cycles of cognitive training (CT) for Alzheimer's disease. Aging Clin Exp Res. 2013;25(4):421-26.
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Table E.3: Exercise

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Table E.4: Occupational Therapy

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Table E.5: Psychotherapy

Review: Cheston 2016 [58] Searches run March 2015
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Table E.6: Reminiscence Therapy

Review: Huang 2015 [59] Searches run December 2014
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Table E.7: Support Groups

Review: Leung 2015 [60] Searches run August 2013
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Table E.8: Multiple Types of Interventions

We have not searched for RCTs for this topic, because the subjects are undefined.

Table E.9: "Other" Types of Interventions

Review: Acupuncture. Lee 2009 [68] Searches run August 2008
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