

Supplementary material 4 – Study characteristics table.

| Study | Design | Participants | Intervention | Comparator | Cognitive Function Outcome Measures |
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| Arcoverde et al. (2014) | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 20 <u>Mean Age:</u> 78.75 <u>%Female:</u> 55 | <u>Intervention Length:</u> 17 weeks <u>Type:</u> AT <u>Frequency:</u> 2 days/week <u>Session duration:</u> 30 min | <u>Type:</u> Usual care <u>Frequency:</u> Not reported <u>Duration:</u> Not reported <u>Intensity:</u> Not reported | <u>Primary Outcome:</u> MMSE, Cambridge Cognitive Examination, Clock Drawing Test, Verbal Fluency (Animals), Trail Making Test – A, Stroop Test, Wechsler Adult Intelligence Scale – Revised (Digit Span Forward, Digit Span Backward), Rey’s Auditory Verbal Learning Test |
| | <u>Follow-up:</u> No <u>Randomization:</u> Individual | <u>Setting:</u> Community-dwelling (Brazil) <u>Mean MMSE:</u> 20.15 <u>Criteria for dementia diagnosis:</u> AD: Criteria of NINCDS-ADRDA MD: Criteria of the NINDS-AIREN <u>Dementia severity:</u> Mild <u>Type of dementia:</u> AD, MD | <u>Volume:</u> 60 min/week <u>Intensity:</u> 40-60% VO2max <u>Adherence Rate:</u> 99.6% | <u>Adherence Rate:</u> Not reported | <u>Secondary Outcome:</u> N/A |
| Bossers et al. (2015) | <u>Type of analysis:</u> ITT <u>Follow-up:</u> Yes, 9-weeks after post-intervention measurement | <u>Sample Size:</u> 82 <u>Mean Age:</u> 85.5 <u>%Female:</u> 73.9 <u>Setting:</u> Community-dwelling (Netherlands) | <u>Intervention Length:</u> 9 weeks <u>Intervention #1:</u> <u>Type:</u> MT (AT, RT) | <u>Type:</u> Other activities (social program) <u>Frequency:</u> 4 days/week | <u>Primary Outcome:</u> MMSE, Rivermead Behavioural Memory Test (Face Recognition Test, Picture Recognition Test), Wechsler Memory Scale-Revised (Visual Memory Span Forward Test, |

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| <p><u>Randomization:</u> Individual</p> | <p><u>Mean MMSE:</u> 15.85</p> <p><u>Criteria for dementia diagnosis:</u> Patient's medical file by Team 290 (i.e., Dutch dementia diagnosis team) or a medical specialist</p> <p><u>Dementia severity:</u> Mild to severe</p> <p><u>Type of dementia:</u> AD, VCI, MD, unspecified dementia</p> | <p><u>Frequency:</u> 4 days/week (2 days AT + 2 days RT)</p> <p><u>Session duration:</u> 30 min</p> <p><u>Volume:</u> 120 min/week</p> <p>RT: 3 sets of progressively 8, 10, 12 reps per exercise</p> <p><u>Intensity:</u> 50-85% max HR; Borg 12-15</p> <p><u>Adherence Rate:</u> 89.2%</p> <p>Intervention #2:</p> <p><u>Type:</u> AT</p> <p><u>Frequency:</u> 4 days/week</p> <p><u>Session duration:</u> 30 min</p> <p><u>Volume:</u> 120 min/week</p> <p><u>Intensity:</u> 50-85% max HR; Borg 12-15</p> <p><u>Adherence Rate:</u> 89.1%</p> | <p><u>Duration:</u> Not reported</p> <p><u>Intensity:</u> 30 min</p> <p><u>Adherence Rate:</u> 93.2%</p> | <p>Visual Memory Span Backward Test, Digit Span Forward, Digit Span Backward, Eight Words Test Direct Recall, Eight Words Test Recognition), Groningen Intelligence Test (Picture Completion Test), Stroop Test, Trail Making Test – A, Verbal Fluency (Animals, Possessions)</p> <p><u>Secondary Outcome:</u> N/A</p> |
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| Cancela et al. (2016) | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 189 | <u>Intervention Length:</u> 65 weeks | <u>Type:</u> Recreational activities (card-playing, reading, craftwork, etc.) | <u>Primary Outcome:</u> MMSE, Fuld Object Memory Evaluation |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 81.76 | <u>Type:</u> AT | <u>Frequency:</u> 7 days/week | <u>Secondary Outcome:</u> N/A |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 66.7 | <u>Frequency:</u> 7 days/week | <u>Frequency:</u> Not reported | |
| | | <u>Setting:</u> Long-term care facility (Spain) | <u>Session duration:</u> > 15 min (participants determined their own length; M±SD min of exercise/week: 108.45±7.99) | <u>Duration:</u> Not reported | |
| | | <u>Mean MMSE:</u> 15.05 | <u>Volume:</u> 108.45 min/week (as per cited by authors) | <u>Intensity:</u> Not reported | |
| | | <u>Criteria for dementia diagnosis:</u> According to DSM-IV criteria | <u>Intensity:</u> Not reported | <u>Adherence Rate:</u> Not reported | |
| | | <u>Dementia severity:</u> Unspecified | <u>Adherence Rate:</u> 88% | | |
| | | <u>Type of dementia:</u> Unspecified | | | |
| Cheng et al. (2014a) and Cheng et al. (2014b) | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 110 | <u>Intervention Length:</u> 12 weeks | Comparison group #1: | <u>Primary Outcome:</u> MMSE, Digit Span Forward, Digit Span Backward, Digit Sequence Forward, Digit Sequence Backward, Verbal Immediate Recall, Verbal Delayed Recall, Verbal Fluency (Animals, Fruits, Vegetables), CDR |
| | <u>Follow-up:</u> Yes, 13 and 26-weeks after post-intervention measurement | <u>Mean Age:</u> 81.53 | <u>Type:</u> Other (Tai Chi) | <u>Type:</u> Other activities (Mahjong) | <u>Secondary Outcome:</u> N/A |
| | <u>Randomization:</u> Cluster | <u>%Female:</u> 65.33 | <u>Frequency:</u> 3 days/week | <u>Frequency:</u> 3 days/week | |
| | | <u>Setting:</u> Long-term care facility (Hong Kong) | <u>Session duration:</u> 60 min | <u>Duration:</u> 60 min | |
| | | <u>Mean MMSE:</u> 18.87 | <u>Volume:</u> 180 min/week | <u>Intensity:</u> Not reported | |
| | | <u>Criteria for dementia diagnosis:</u> MMSE of 10-24 and CDR ≥ 0.5 | | | |

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| | | <u>Dementia severity:</u> Very mild to moderate | | <u>Adherence Rate:</u> Not reported | |
| | | <u>Type of dementia:</u> Unspecified | <u>Intensity:</u> Not reported | Comparison group #2: | |
| | | | <u>Adherence Rate:</u> Not reported | <u>Type:</u> Other activities (Handicraft) | |
| | | | | <u>Frequency:</u> 3 days/week | |
| | | | | <u>Duration:</u> 60 min | |
| | | | | <u>Intensity:</u> Not reported | |
| | | | | <u>Adherence:</u> Not reported | |
| | <u>Type of analysis:</u> PPT | <u>Sample Size:</u> 27 | <u>Intervention Length:</u> 12 weeks | <u>Type:</u> Usual care | <u>Primary Outcome:</u> MMSE, Verbal Fluency, Stroop Test |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 79.38 | <u>Type:</u> MT (AT, RT) | <u>Frequency:</u> Not reported | |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 58.51 | <u>Frequency:</u> 2 days/week | <u>Duration:</u> Not reported | <u>Secondary Outcome:</u> N/A |
| de Oliveria Silva et al. (2019)* | | <u>Setting:</u> Community-dwelling (Brazil) | <u>Session duration:</u> 60 min | <u>Intensity:</u> Not reported | |
| | | <u>Mean MMSE:</u> 20.78 | AT: 30 min | <u>Adherence Rate:</u> Not reported | |
| | | <u>Criteria for dementia diagnosis:</u> Structured clinical interview to assess mental disorders according to the DSM-IV criteria and CDR of 0.5-2 | RT: 3 sets of 8 to 12 reps | | |
| | | | <u>Volume:</u> 120 min/week | | |

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| | <u>Dementia severity:</u> Mild and moderate | <u>Intensity:</u> 70% VO2max or 80% max HR | | |
| | <u>Type of dementia:</u> AD | <u>Adherence Rate:</u> 87% | | |
| | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 97 | <u>Intervention Length:</u> 26 weeks | <u>Type:</u> Other activities (social activities) |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 87.6 | <u>Type:</u> MT (coordination and balance, AT, RT) | <u>Primary Outcome:</u> Non-cognitive function |
| | <u>Randomization:</u> Cluster | <u>%Female:</u> 79.38 | <u>Frequency:</u> 2 days/week | <u>Secondary Outcome:</u> MMSE |
| | | <u>Setting:</u> Long-term care facility (France) | <u>Frequency:</u> 2 days/week | <u>Duration:</u> 60 min |
| | | <u>Mean MMSE:</u> 11.1 | <u>Session duration:</u> 60 min | <u>Intensity:</u> Not reported |
| de Souto Barreto et al. (2017) | <u>Criteria for dementia diagnosis:</u> According to DSM-IV criteria | <u>Dementia severity:</u> Moderate and severe | <u>Volume:</u> 120 min/week | <u>Adherence Rate:</u> 74.2% |
| | <u>Type of dementia:</u> AD, vascular dementia, mixed dementia | <u>Intensity:</u> Targeted to be moderate (No objective measure reported) | <u>Adherence Rate:</u> 67.6% | |

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| Enette et al. (2020) | <p><u>Type of analysis:</u> Complete-case</p> <p><u>Follow-up:</u> No</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 54</p> <p><u>Mean Age:</u> 76.5</p> <p><u>%Female:</u> 62.86</p> <p><u>Setting:</u> Community-dwelling and long-term care facility (France)</p> <p><u>Mean MMSE:</u> 19.45</p> <p><u>Criteria for dementia diagnosis:</u> According to revised DSM-IV criteria</p> <p><u>Dementia severity:</u> Mild and moderate</p> <p><u>Type of dementia:</u> AD</p> | <p><u>Intervention Length:</u> 9 weeks</p> <p>Intervention #1:</p> <p><u>Type:</u> Continuous AT</p> <p><u>Frequency:</u> 2 days/week</p> <p><u>Session duration:</u> 30 min</p> <p><u>Volume:</u> 60 min/week</p> <p><u>Intensity:</u> 70% HRmax or 50% maximal tolerated power for participants who did not reach at least 85% max HR during the incremental exercise test</p> <p><u>Adherence Rate:</u> Not reported</p> <p>Intervention #2:</p> <p><u>Type:</u> Intermittent AT</p> <p><u>Frequency:</u> 2 days/week</p> <p><u>Session duration:</u> 30 min</p> | <p><u>Type:</u> Other activities (information sessions)</p> <p><u>Frequency:</u> 1 day/week</p> <p><u>Duration:</u> 30 min</p> <p><u>Intensity:</u> Not reported</p> <p><u>Adherence Rate:</u> Not reported</p> | <p><u>Primary Outcome:</u> Non-cognitive function</p> <p><u>Secondary Outcome:</u> MMSE, Rey Auditory Verbal Learning Test, Digit Span Forward, Digit Span Backward</p> |
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| | | | <u>Volume:</u> 60 min/week | | |
| | | | <u>Intensity:</u> 6 x 1 minute at 80% max HR for participants who did not reach at least 85% max HR during incremental exercise test or at a workload equal to maximal tolerated power inferior to 10 watts for others; 4 min active recovery at 60% max HR between intervals | | |
| | | | <u>Adherence Rate:</u> Not reported | | |
| | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 60 | <u>Intervention Length:</u> 24 weeks | Comparison group #1: | <u>Primary Outcome:</u> MMSE, Digit Cancellation Test, ADAS-Cog, Frontal Assessment Battery |
| | <u>Follow-up:</u> Yes, 12 weeks after post-intervention measurement | <u>Mean Age:</u> 79.33 | <u>Type:</u> MT (AT, RT) | <u>Type:</u> Usual care | |
| | | <u>%Female:</u> 65 | <u>Frequency:</u> 3 days/week | <u>Frequency:</u> Not reported | <u>Secondary Outcome:</u> N/A |
| | | <u>Setting:</u> Community-dwelling (Italy) | <u>Session duration:</u> 90 min | <u>Duration:</u> Not reported | |
| Fonte et al. (2019)* | <u>Randomization:</u> Individual | <u>Mean MMSE:</u> 18.7 | AT: 45 min RT: 3 sets of 12 reps | <u>Intensity:</u> Not reported | |
| | | <u>Criteria for dementia diagnosis:</u> According to the National Institute on Aging-Alzheimer's Association diagnostic guideline for AD | <u>Volume:</u> 270 min/week | <u>Adherence Rate:</u> Not reported | |

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| | <u>Dementia severity:</u> Unspecified | <u>Intensity:</u> AT: 70% max HR (or 65% max HR for those on beta- blockers) | Comparison group #2: <u>Type:</u> Cognitive training | |
| | <u>Type of dementia:</u> AD | RT: 85% 1RM | <u>Frequency:</u> 3 days/week | |
| | | <u>Adherence Rate:</u> Not reported | <u>Duration:</u> 90 min | |
| | | | <u>Intensity:</u> Not reported | |
| | | | <u>Adherence rate:</u> Not reported | |
| | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 16 | <u>Intervention Length:</u> 12 weeks | <u>Type:</u> Other activities (social activities) |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 83.06 | <u>Type:</u> AT | <u>Primary Outcome:</u> MMSE |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 63 | <u>Frequency:</u> 3 days/week | <u>Secondary Outcome:</u> N/A |
| | | <u>Setting:</u> Long-term care facility (Canada) | <u>Session duration:</u> 15 min | <u>Frequency:</u> 1 day/week |
| | | <u>Mean MMSE:</u> 12.4 | <u>Volume:</u> 45 min/week | <u>Duration:</u> 30-45 min |
| | <u>Criteria for dementia diagnosis:</u> Clinical diagnosis of dementia and MMSE < 23 | <u>Intensity:</u> Self- selected pace for 15 min or until they reached moderate breathlessness (measured by talk test) | <u>Intensity:</u> Not reported | |
| | <u>Dementia severity:</u> Unspecified | | <u>Adherence Rate:</u> 80% | |
| | <u>Type of dementia:</u> AD, VCI, FTD, mixed, and unspecified dementia | | | |

Harris et al.
(2017)

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| | | | <u>Adherence Rate:</u> 74% | | |
| | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 65 | <u>Intervention Length:</u> 26 weeks | Comparison group #1: | <u>Primary Outcome:</u> Non-cognitive function |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 85.31 | <u>Type:</u> MT (AT, RT) | <u>Type:</u> Other activities (ADL) | <u>Secondary Outcome:</u> MMSE, Severe Impairment Battery – Short Form, Groningen Intelligence Test (Category Fluency), Wechsler Digit Span Task Backward, Frontal Assessment Battery (Go No Go Test, Conflicting Instruction Test), Digit Span Forward |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 81.7 | <u>Frequency:</u> 3 days/week (alternating AT and RT) | <u>Frequency:</u> 3 days/week | |
| | | <u>Setting:</u> Long-term care facility (Netherlands) | <u>Session duration:</u> 30-45 min | <u>Duration:</u> Not reported | |
| | | <u>Mean MMSE:</u> 11.83 | <u>RT:</u> 3 sets of progressively 8, 10, 12, to 15 reps | <u>Intensity:</u> Not reported | |
| | | <u>Criteria for dementia diagnosis:</u> Unspecified | <u>Volume:</u> 90-135 min/week | <u>Adherence Rate:</u> 68% | |
| | | <u>Dementia severity:</u> Mild to severe | <u>Intensity:</u> Not reported | Comparison group #1: | |
| | | <u>Type of dementia:</u> AD, VCI, mixed, and unspecified dementia | <u>Adherence Rate:</u> 55% | <u>Type:</u> Other activities (social visits) | |
| | | | | <u>Frequency:</u> 3 days/week | |
| | | | | <u>Duration:</u> Not reported | |
| | | | | <u>Intensity:</u> Not reported | |
| | | | | <u>Adherence Rate:</u> Not reported | |
| Henskens et al. (2018)** | | | | | |

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| Ho et al. (2020) | <p><u>Type of analysis:</u> ITT</p> <p><u>Follow-up:</u> Yes, 12- and 36-weeks after post-intervention measurement</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 204</p> <p><u>Mean Age:</u> 79</p> <p><u>%Female:</u> 81.9</p> <p><u>Setting:</u> Community-dwelling and long-term care facility (Hong Kong)</p> <p><u>Mean MMSE:</u> Not reported</p> <p><u>Criteria for dementia diagnosis:</u> According to DSM-IV or diagnosis of mild neurocognitive disorder according to DSM-V and CDR of 0.5-1</p> <p><u>Dementia severity:</u> Very mild and mild</p> <p><u>Type of dementia:</u> Unspecified</p> | <p><u>Intervention Length:</u> 12 weeks</p> <p>Intervention #1:</p> <p><u>Type:</u> Other (Dance movement therapy)</p> <p><u>Frequency:</u> 2 days/week</p> <p><u>Session duration:</u> 60 min</p> <p><u>Volume:</u> 120 min/week</p> <p><u>Intensity:</u> 40-60% VO2max</p> <p><u>Adherence Rate:</u> Not reported</p> <p>Intervention #2:</p> <p><u>Type:</u> MT (Stretching, joint movements, exercise with towels)</p> <p><u>Frequency:</u> 2 days/week</p> <p><u>Session duration:</u> 60 min</p> <p><u>Volume:</u> 120 min/week</p> | <p><u>Type:</u> Other activities (wait-list)</p> <p><u>Frequency:</u> N/A</p> <p><u>Duration:</u> N/A</p> <p><u>Intensity:</u> N/A</p> <p><u>Adherence Rate:</u> N/A</p> | <p><u>Primary Outcome:</u> Fuld Object Memory Evaluation, Digit Span Forward, Digit Span Backward, Trail Making Test – A and B</p> <p><u>Secondary Outcome:</u> N/A</p> |
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| | | | <u>Intensity:</u> 40-60% VO2max | | |
| | | | <u>Adherence Rate:</u> Not reported | | |
| | <u>Type of analysis:</u> Complete case | <u>Sample Size:</u> 21 <u>Mean Age:</u> 72 <u>%Female:</u> 61.9 | <u>Intervention Length:</u> 26 weeks <u>Type:</u> AT <u>Frequency:</u> 3 days/week <u>Session duration:</u> 60 min <u>Volume:</u> 180 min/week <u>Intensity:</u> 60-70% HRR; Borg 14-15 <u>Adherence Rate:</u> 68% | <u>Type:</u> Usual care + educational material <u>Frequency:</u> Not reported <u>Duration:</u> Not reported <u>Intensity:</u> Not reported <u>Adherence Rate:</u> Not reported | <u>Primary Outcome:</u> Eriksen Flanker Task (Congruent and Incongruent) <u>Secondary Outcome:</u> MMSE, MoCA |
| Hsu et al. (2018) | <u>Follow-up:</u> No <u>Randomization:</u> Individual | <u>Setting:</u> Community-dwelling (Canada) <u>Mean MMSE:</u> 27.25 <u>Criteria for dementia diagnosis:</u> Small vessel ischemic disease was defined as evidence of relevant cerebrovascular disease by brain CT or MRI. The presence or a history of neurological signs, such as Babinski sign, sensory deficit, gait disorder, or extrapyramidal signs consistent with sub-cortical brain lesion(s) was required and confirmed by study physicians. Cognitive syndrome was defined as a baseline MoCA < 26. <u>Dementia severity:</u> Unspecified | | | |

| <u>Type of dementia: SIVCI</u> | | | | | |
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| Huang et al. (2019) | <u>Type of analysis:</u> Complete case | <u>Sample Size:</u> 80 | <u>Intervention Length:</u> 43 weeks | <u>Type:</u> Usual care | <u>Primary Outcome:</u> Non-cognitive function |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 81.9 | <u>Type:</u> Other (Tai Chi) | <u>Frequency:</u> Not reported | <u>Secondary Outcome:</u> MMSE, MoCA, WHO- |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 67.5 | <u>Frequency:</u> 3 days/week | <u>Duration:</u> Not reported | University of California Los Angeles-Auditory Verbal Learning Test, Trail Making Test |
| | | <u>Setting:</u> Community-dwelling and long-term care facility (China) | <u>Session duration:</u> 20 min | <u>Intensity:</u> Not reported | |
| | | <u>Mean MMSE:</u> 20.76 | <u>Volume:</u> 60 min/week | <u>Adherence Rate:</u> Not reported | |
| | | <u>Criteria for dementia diagnosis:</u> According to DSM-IV criteria | <u>Intensity:</u> Not reported | | |
| | | <u>Dementia severity:</u> Mild | <u>Adherence Rate:</u> Not reported | | |
| | | <u>Type of dementia:</u> Unspecified | | | |

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| Karssemeijer et al. (2019)*** | <p><u>Type of analysis:</u> ITT</p> <p><u>Follow-up:</u> Yes, 12 weeks after post-intervention measurement</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 77</p> <p><u>Mean Age:</u> 80.35</p> <p><u>%Female:</u> 45.45</p> <p><u>Setting:</u> Community-dwelling (Netherlands)</p> <p><u>Mean MMSE:</u> 22.2</p> <p><u>Criteria for dementia diagnosis:</u> According to the DSM-IV criteria, with a MMSE score ≥ 17</p> <p><u>Dementia severity:</u> Unspecified</p> <p><u>Type of dementia:</u> AD, VCI, mixed, and unspecified dementia</p> | <p><u>Intervention Length:</u> 12 weeks</p> <p><u>Type:</u> AT</p> <p><u>Frequency:</u> 3 days/week</p> <p><u>Session duration:</u> 30-50 min</p> <p><u>Volume:</u> 90-150 min/week</p> <p><u>Intensity:</u> 65-75% HRR</p> <p><u>Adherence Rate:</u> 81.1%</p> | <p><u>Type:</u> Flexibility and relaxation</p> <p><u>Frequency:</u> 3 days/week</p> <p><u>Duration:</u> 30 min</p> <p><u>Intensity:</u> Not reported</p> <p><u>Adherence Rate:</u> 85.4%</p> | <p><u>Primary Outcome:</u> Trail Making Test – B, Stroop Test, Letter Fluency, Rule Shift Cards Test</p> <p><u>Secondary Outcome:</u> Location Learning Test, Wechsler Adult Intelligence Scale-III Digit Span, Wechsler Memory Scale-III Spatial Span, Trail Making Test – A,</p> |
| Kemoum et al. (2010) | <p><u>Type of analysis:</u> Complete case</p> <p><u>Follow-up:</u> No</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 38</p> <p><u>Mean Age:</u> 81.8</p> <p><u>%Female:</u> 45.45</p> <p><u>Setting:</u> Long-term care facility (France)</p> <p><u>Mean MMSE:</u> 12.75</p> <p><u>Criteria for dementia diagnosis:</u> Diagnosis by a neurologist according to the DSM-IV criteria, with a MMSE score < 23</p> | <p><u>Intervention Length:</u> 15 weeks</p> <p><u>Type:</u> MT (aerobic, stamina, equilibrium exercises)</p> <p><u>Frequency:</u> 3 days/week (1 day of each type of exercise: aerobic, stamina, equilibrium)</p> <p><u>Session duration:</u> 60 min</p> | <p><u>Type:</u> No treatment</p> <p><u>Frequency:</u> N/A</p> <p><u>Duration:</u> N/A</p> <p><u>Intensity:</u> N/A</p> <p><u>Adherence Rate:</u> N/A</p> | <p><u>Primary Outcome:</u> Rapid Evaluation of Cognitive Function</p> <p><u>Secondary Outcome:</u> N/A</p> |

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| | <u>Dementia severity:</u> Unspecified | <u>Volume:</u> 180 min/week | | |
| | <u>Type of dementia:</u> AD | <u>Intensity:</u> 60-70% HRR | | |
| | | <u>Adherence Rate:</u> 90.2% | | |
| | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 30 | <u>Intervention Length:</u> 48 weeks | <u>Type:</u> No treatment |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 80.97 | <u>Type:</u> MT | <u>Frequency:</u> N/A |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 100 | <u>Frequency:</u> 2-3 days/week | <u>Duration:</u> N/A |
| | | <u>Setting:</u> Community- dwelling (South Korea) | <u>Session duration:</u> 30- 60 min | <u>Intensity:</u> N/A |
| | | <u>Mean MMSE:</u> 14 | <u>RT:</u> 2-3 sets of 10-20 reps | <u>Adherence Rate:</u> N/A |
| | <u>Criteria for dementia diagnosis:</u> Diagnosed by a physician | | <u>Volume:</u> 60-180 min/week | |
| | <u>Dementia severity:</u> Unspecified | | <u>Intensity:</u> Months 1- 3: 30% VO2max, months 4-6: 40% VO2max, months 7- 9: 50% VO2max, months 10-12: 60% VO2max | |
| | <u>Type of dementia:</u> AD and unspecified dementia | | <u>Adherence Rate:</u> Not reported | |
| Kwak et al. (2008) | | | | <u>Primary Outcome:</u> MMSE <u>Secondary Outcome:</u> N/A |

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| Liu-Ambrose et al. (2016) | <p><u>Type of analysis:</u> ITT</p> <p><u>Follow-up:</u> Yes, 26 weeks after post-intervention measurement</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 71</p> <p><u>Mean Age:</u> 74.25</p> <p><u>%Female:</u> 51.5</p> <p><u>Setting:</u> Community-dwelling (Canada)</p> <p><u>Mean MMSE:</u> 26.35</p> <p><u>Criteria for dementia diagnosis:</u> Presence of both small vessel ischemic disease and cognitive syndrome. Small vessel ischemic disease was defined as evidence of relevant cerebrovascular disease by brain CT or MRI. The presence or a history of neurologic signs such as Babinski sign, sensory deficit, gait disorder, or extrapyramidal signs consistent with subcortical brain lesions was required and confirmed by study physicians. Cognitive syndrome was defined as a baseline MoCA score <26/30 and a MMSE score of >20 at screening.</p> <p><u>Dementia severity:</u> Mild</p> <p><u>Type of dementia:</u> SIVCI</p> | <p><u>Intervention Length:</u> 26 weeks</p> <p><u>Type:</u> AT</p> <p><u>Frequency:</u> 3 days/week</p> <p><u>Session duration:</u> 60 min</p> <p><u>Volume:</u> 180 min/week</p> <p><u>Intensity:</u> Initial intensity of 40% HRR, progressed to 60-70% HRR over first 12 weeks, then sustained 65% HRR for remainder of intervention; Borg 14-15</p> <p><u>Adherence Rate:</u> 68%</p> | <p><u>Type:</u> Usual care + education</p> <p><u>Frequency:</u> Not reported</p> <p><u>Duration:</u> Not reported</p> <p><u>Intensity:</u> Not reported</p> <p><u>Adherence Rate:</u> Not reported</p> | <p><u>Primary Outcome:</u> ADAS-Cog, EXIT-25</p> <p><u>Secondary Outcome:</u> Stroop Test, Trail Making Test – A and B, Verbal Digit Span Forward and Backward</p> |
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| Miu et al. (2008) | <p><u>Type of analysis:</u> Complete case</p> <p><u>Follow-up:</u> Yes, 12, 26, and 39 weeks after post-intervention measurement</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 85</p> <p><u>Mean Age:</u> 76</p> <p><u>%Female:</u> 54</p> <p><u>Setting:</u> Community-dwelling (Hong Kong)</p> <p><u>Mean MMSE:</u> 19.56</p> <p><u>Criteria for dementia diagnosis:</u> According to the DSM-IV-TR criteria</p> <p><u>Dementia severity:</u> Mild and moderate</p> <p><u>Type of dementia:</u> AD, vascular dementia, mixed dementia, Parkinson's dementia</p> | <p><u>Intervention Length:</u> 12 weeks</p> <p><u>Type:</u> AT</p> <p><u>Frequency:</u> 2 days/week</p> <p><u>Session duration:</u> 45-60 min</p> <p><u>Volume:</u> 90-120 min/week</p> <p><u>Intensity:</u> Not reported</p> <p><u>Adherence Rate:</u> Not reported</p> | <p><u>Type:</u> No treatment</p> <p><u>Frequency:</u> N/A</p> <p><u>Duration:</u> N/A</p> <p><u>Intensity:</u> N/A</p> <p><u>Adherence Rate:</u> N/A</p> | <p><u>Primary Outcome:</u> MMSE, ADAS-Cog</p> <p><u>Secondary Outcome:</u> N/A</p> |
| Pitkälä et al. (2013)**** | <p><u>Type of analysis:</u> ITT</p> <p><u>Follow-up:</u> No</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 140</p> <p><u>Mean Age:</u> 77.9</p> <p><u>%Female:</u> 40</p> <p><u>Setting:</u> Community-dwelling (Finland)</p> <p><u>Mean MMSE:</u> 17.75</p> <p><u>Criteria for dementia diagnosis:</u> Diagnosis by a geriatrician or neurologist and according to the NINCDS-ADRDA criteria</p> | <p><u>Intervention Length:</u> 52 weeks</p> <p><u>Type:</u> MT</p> <p><u>Frequency:</u> 2 days/week</p> <p><u>Session duration:</u> 60 min</p> <p><u>Volume:</u> 120 min/week</p> <p><u>Intensity:</u> Not reported</p> | <p><u>Type:</u> Usual care + materials on nutrition and exercise</p> <p><u>Frequency:</u> Not reported</p> <p><u>Duration:</u> Not reported</p> <p><u>Intensity:</u> Not reported</p> <p><u>Adherence Rate:</u> Not reported</p> | <p><u>Primary Outcome:</u> Non-cognitive function</p> <p><u>Secondary Outcome:</u> MMSE</p> |

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| | for diagnosis of probable AD | <u>Adherence Rate:</u> Not reported | | |
| | <u>Dementia severity:</u> Very mild to severe | | | |
| | <u>Type of dementia:</u> AD | | | |
| | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 91 | <u>Intervention Length:</u> 24 weeks (12 weeks of LI + 12 weeks of HI) | <u>Type:</u> Flexibility + recreational activities |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 81.9 | | <u>Frequency:</u> 3 days/week |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 62.32 | <u>Type:</u> MT (AT, RT) | <u>Duration:</u> 30 min |
| | | <u>Setting:</u> Community-dwelling and long-term care facility (Netherlands) | <u>Frequency:</u> 3 days/week (alternate between AT + RT) | <u>Intensity:</u> Not reported |
| | | <u>Mean MMSE:</u> 20.45 | <u>Session duration:</u> 30 min | <u>Adherence Rate:</u> 69.5% |
| | | <u>Criteria for dementia diagnosis:</u> Diagnosis by a primary care physician or geriatrician according to the DSM-IV criteria | RT: 2-3 sets of 6-12 reps | <u>Primary Outcome:</u> MMSE, Trail Making Test – A, Digit Span Forward and Backward, Visual Memory Span Forward and Backward, Stroop Test, Phonemic Fluency Test |
| Sanders et al. (2020) | <u>Dementia severity:</u> Mild to moderate | <u>Volume:</u> 90 min/week | <u>Intensity:</u> | <u>Secondary Outcome:</u> N/A |
| | <u>Type of dementia:</u> AD, vascular dementia, mixed dementia, dementia with Lewy bodies, and unspecified dementia | AT: LI - 57-63% HRmax, Borg 9-11 | HI - interval training, alternating 4 min intervals at 83-89% HRmax, Borg 15-16, 3 min active rest at 71-77% HRmax, Borg 13-14 | |

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| | | | RT: LI - Borg 9-11 | | |
| | | | HI - Borg 13-16 | | |
| | | | <u>Adherence Rate:</u> 60.7% | | |
| | <u>Type of analysis:</u> ITT | <u>Sample Size:</u> 27 | <u>Intervention Length:</u> 12 weeks | <u>Type:</u> Other activities (home safety) | <u>Primary Outcome:</u> Non-cognitive function |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 75.25 | <u>Type:</u> MT (AT, RT, balance and flexibility) | <u>Frequency:</u> Not reported | <u>Secondary Outcome:</u> MMSE, Boston Naming Test, Hopkins Verbal Learning Test |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 70.37 | <u>Frequency:</u> 7 days/week | <u>Duration:</u> Not reported | |
| | | <u>Setting:</u> Community-dwelling (United States) | <u>Duration:</u> Not reported | <u>Intensity:</u> Not reported | |
| | | <u>Mean MMSE:</u> 17.8 | <u>Volume:</u> Not reported | <u>Adherence Rate:</u> Not reported | |
| | | <u>Criteria for dementia diagnosis:</u> According to the NINCDS-ADRDA criteria | <u>Intensity:</u> Not reported | | |
| | | <u>Dementia severity:</u> Unspecified | <u>Adherence Rate:</u> Not reported | | |
| | | <u>Type of dementia:</u> AD | | | |
| | <u>Type of analysis:</u> Not reported | <u>Sample Size:</u> 75 | <u>Intervention Length:</u> 12 weeks | <u>Type:</u> No treatment | <u>Primary Outcome:</u> Clock Drawing Test |
| | <u>Follow-up:</u> No | <u>Mean Age:</u> 80.5 | <u>Type:</u> MT (Joint and large muscle group movement) | <u>Frequency:</u> N/A | <u>Secondary Outcome:</u> N/A |
| | <u>Randomization:</u> Individual | <u>%Female:</u> 74.67 | <u>Frequency:</u> 3 days/week | <u>Duration:</u> N/A | |
| | | <u>Setting:</u> Long-term care facility (Australia) | | <u>Intensity:</u> N/A | |
| | | <u>Mean MMSE:</u> Not reported | | <u>Adherence Rate:</u> N/A | |

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| | | <p><u>Criteria for dementia diagnosis:</u> Assessments of dementia were made by the Local Aged Care Assessment Team responsible for the aged care facilities involved in this study and MMSE < 23</p> <p><u>Dementia severity:</u> Mild to moderate</p> <p><u>Type of dementia:</u> Unspecified</p> | <p><u>Session duration:</u> 30 min</p> <p><u>Volume:</u> 90 min/week</p> <p><u>Intensity:</u> Not reported</p> <p><u>Adherence Rate:</u> Not reported</p> | | |
| Toots et al. (2017) | <p><u>Type of analysis:</u> ITT</p> <p><u>Follow-up:</u> Yes, 12 weeks after post-intervention measurement</p> <p><u>Randomization:</u> Cluster</p> | <p><u>Sample Size:</u> 186</p> <p><u>Mean Age:</u> 85.1</p> <p><u>%Female:</u> 75.8</p> <p><u>Setting:</u> Long-term care facility (Sweden)</p> <p><u>Mean MMSE:</u> 14.9</p> <p><u>Criteria for dementia diagnosis:</u> According to the DSM-IV-TR criteria</p> <p><u>Dementia severity:</u> Mild to moderate</p> <p><u>Type of dementia:</u> AD, VCI, mixed dementia, and unspecified dementia</p> | <p><u>Intervention Length:</u> 16 weeks</p> <p><u>Type:</u> MT (RT, Balance)</p> <p><u>Frequency:</u> 2-3 days/week</p> <p><u>Session duration:</u> 45 min</p> <p>RT: 8-12 reps</p> <p>Balance: 13-15 reps</p> <p><u>Volume:</u> 90-135 min/week</p> <p><u>Intensity:</u> Target was high intensity</p> <p>RT: 8-12 RM</p> | <p><u>Type:</u> Other activities (reading, listening to music, conversations)</p> <p><u>Frequency:</u> 2-3 days/week</p> <p><u>Duration:</u> 45 min</p> <p><u>Intensity:</u> Not reported</p> <p><u>Adherence Rate:</u> 70%</p> | <p><u>Primary Outcome:</u> MMSE, ADAS-Cog, Verbal Fluency</p> <p><u>Secondary Outcome:</u> N/A</p> |

Adherence Rate:

73%

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| Venturelli et al. (2011) | <u>Type of analysis:</u> Complete-case | <u>Sample Size:</u> 24 <u>Mean Age:</u> 84 <u>%Female:</u> Not reported | <u>Intervention Length:</u> 26 weeks <u>Type:</u> AT <u>Frequency:</u> 4 days/week <u>Session duration:</u> 30 min <u>Volume:</u> 120 min/week <u>Intensity:</u> The caregiver was instructed to encourage participant to maintain “fastest” walking speed possible. | <u>Type:</u> Other activities (bingo, sewing, music therapy) <u>Frequency:</u> 7 days/week <u>Duration:</u> Not reported <u>Intensity:</u> Not reported <u>Adherence Rate:</u> Not reported | <u>Primary Outcome:</u> MMSE <u>Secondary Outcome:</u> N/A |
| | <u>Follow-up:</u> No <u>Randomization:</u> Individual | <u>Setting:</u> Long-term care facility (Italy) <u>Mean MMSE:</u> 12.5 <u>Criteria for dementia diagnosis:</u> MMSE between 5-15 and CDR of 3-4 <u>Dementia severity:</u> Moderate and severe <u>Type of dementia:</u> AD | | | |

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| | | | <u>Adherence Rate:</u> 93.4% | | |
| | <u>Type of analysis:</u> Complete-case | <u>Sample Size:</u> 78 <u>Mean Age:</u> 77.4 | <u>Intervention Length:</u> 26 weeks | <u>Type:</u> Stretching <u>Frequency:</u> 3 days/week | <u>Primary Outcome:</u> ADAS-Cog |
| | <u>Follow-up:</u> No | <u>%Female:</u> 41 | <u>Type:</u> AT | <u>Duration:</u> 30-60 min | <u>Secondary Outcome:</u> N/A |
| | <u>Randomization:</u> Individual | <u>Setting:</u> Community-dwelling (United States) | <u>Frequency:</u> 3 days/week | <u>Intensity:</u> Not reported | |
| | | <u>Mean MMSE:</u> Not reported | <u>Session duration:</u> 30-60 min | <u>Adherence Rate:</u> 83.2% | |
| Yu et al. (2020) | | <u>Criteria for dementia diagnosis:</u> Verified by participants' providers and investigators, with MMSE between 15-26 and CDR of 0.5-2 | <u>Volume:</u> 90-180 min/week | <u>Intensity:</u> 50-75% HRR; Borg 9-15 | |
| | | <u>Dementia severity:</u> Mild to moderate | <u>Adherence Rate:</u> 86.7% | | |
| | | <u>Type of dementia:</u> AD | | | |

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| Yu et al. (2021) | <p><u>Type of analysis:</u> Intention-to-treat</p> <p><u>Follow-up:</u> Yes, 26 weeks after post-intervention measurement</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 96</p> <p><u>Mean Age:</u> 77.4</p> <p><u>%Female:</u> 45</p> <p><u>Setting:</u> Community-dwelling (United States)</p> <p><u>Mean MMSE:</u> 21.4</p> <p><u>Criteria for dementia diagnosis:</u> Verified by participants' providers and investigators, with MMSE between 15-26 and CDR of 0.5-2</p> <p><u>Dementia severity:</u> Mild to moderate</p> <p><u>Type of dementia:</u> AD</p> | <p><u>Intervention Length:</u> 27 weeks</p> <p><u>Type:</u> AT</p> <p><u>Frequency:</u> 3 days/week</p> <p><u>Session duration:</u> 40-60 min</p> <p><u>Volume:</u> 120-180 min/week</p> <p><u>Intensity:</u> 50-55% HRR or 9-11 RPE (weeks 1 and 2), 55-60% HRR or 10-12 RPE (week 3) until reaching 70-75% or 12-14 RPE (week 10-27)</p> <p><u>Adherence Rate:</u> 82.8%</p> | <p><u>Type:</u> Stretching</p> <p><u>Frequency:</u> 3 days/week</p> <p><u>Duration:</u> 40-60 min</p> <p><u>Intensity:</u> Not reported</p> <p><u>Adherence Rate:</u> 81.3%</p> | <p><u>Primary Outcome:</u> ADAS-Cog</p> <p><u>Secondary Outcomes:</u> Composite scores of episodic memory, executive function, attention, processing speed, and language.</p> |
| Telenius et al. (2015) | <p><u>Type of analysis:</u> Intention-to-treat</p> <p><u>Follow-up:</u> No</p> <p><u>Randomization:</u> Individual</p> | <p><u>Sample Size:</u> 163</p> <p><u>Mean Age:</u> 86.7</p> <p><u>%Female:</u> 73.6</p> <p><u>Setting:</u> Long-term care facility (Norway)</p> <p><u>Mean MMSE:</u> 15.7</p> <p><u>Criteria for dementia diagnosis:</u> CDR of 1 or 2</p> | <p><u>Intervention Length:</u> 12 weeks</p> <p><u>Type:</u> RT</p> <p><u>Frequency:</u> 2 days/week</p> <p><u>Session duration:</u> 50-60 min/8-12 repetitions per exercise</p> | <p><u>Type:</u> Light physical activity, reading, playing games, listening to music and conversations</p> <p><u>Frequency:</u> 2 days/week</p> <p><u>Duration:</u> 50-60 min</p> | <p><u>Primary Outcome:</u> Balance (Berg Balance Scale)</p> <p><u>Secondary Outcomes:</u> MMSE</p> |

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| <u>Dementia severity:</u> Mild to moderate | <u>Volume:</u> 100-120 min/week | <u>Intensity:</u> Light |
| <u>Type of dementia:</u> Unspecified | <u>Intensity:</u> 70-80% RM | <u>Adherence Rate:</u> 69% |
| | <u>Adherence Rate:</u> 75% | |

Abbreviations: AD = Alzheimer's disease, ADL = activities of daily living, AT = aerobic training, CDR = Clinical Dementia Rating, CT = cognitive training, HI = high-intensity, HRmax = maximum heart rate, HRR = heart rate reserve, ITT = intention-to-treat, LI = low-intensity, MD = mixed dementia, MMSE = Mini-Mental State Examination, MoCA = Montreal Cognitive Assessment Battery, MT = multicomponent training, PPT = per-protocol, RT = resistance training, RM = repetition maximum, SIVCI = subcortical ischemic vascular cognitive impairment, VCI = vascular cognitive impairment, VO2max = maximum rate of oxygen consumption.

*Included participants with mild cognitive impairment (MCI). Authors had a group for participants with MCI and a group for participants with AD along with separate data analysis. Sample size, mean age, % female, and mean MMSE data do not include participants with MCI.

**Had an ADL + exercise group that was not included. Sample size, mean age, % female, and mean MMSE data do not include ADL + exercise participants.

***Had an Exergame + CT intervention group that was not included. Sample size, mean age, % female, and mean MMSE data do not include ADL + exercise participants.

****Had a home-based exercise + CT intervention group that was not included. Sample size, mean age, % female, and mean MMSE data do not include ADL + exercise participants.