Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

Supplementary material 4 – Study characteristics table.

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

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

Randomization: Individual	Mean MMSE: 15.85 Criteria for dementia diagnosis: Patient's medical file by Team 290 (i.e., Dutch dementia diagnosis team) or a medical specialist Dementia severity: Mild to severe Type of dementia: AD, VCI, MD, unspecified dementia	Frequency: 4 days/week (2 days AT + 2 days RT) Session duration: 30 min Volume: 120 min/week RT: 3 sets of progressively 8, 10, 12 reps per exercise Intensity: 50-85% max HR; Borg 12-15 Adherence Rate: 89.2% **Intervention #2:** Type: AT Frequency: 4 days/week Session duration: 30 min Volume: 120 min/week Intensity: 50-85% max HR; Borg 12-15 Adherence Rate: 89.1%	Duration: Not reported Intensity: 30 min Adherence Rate: 93.2%	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, Posessions) Secondary Outcome: N/A

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance
placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

Cancela et al. (2016)	Type of analysis: ITT Follow-up: No Randomization: Individual	Sample Size: 189 Mean Age: 81.76 %Female: 66.7 Setting: Long-term care facility (Spain) Mean MMSE: 15.05 Criteria for dementia diagnosis: According to DSM-IV criteria Dementia severity: Unspecified Type of dementia: Unspecified	Intervention Length: 65 weeks Type: AT Frequency: 7 days/week Session duration: > 15 min (participants determined their own length; M±SD min of exercise/week: 108.45±7.99) Volume: 108.45 min/week (as per cited by authors) Intensity: Not reported Adherence Rate: 88%	Type: Recreational activities (card-playing, reading, craftwork, etc.) Frequency: Not reported Duration: Not reported Intensity: Not reported Adherence Rate: Not reported	Primary Outcome: MMSE, Fuld Object Memory Evaluation Secondary Outcome: N/A
Cheng et al. (2014a) and Cheng et al. (2014b)	Type of analysis: ITT Follow-up: Yes, 13 and 26-weeks after post-intervention measurement Randomization: Cluster	Sample Size: 110 Mean Age: 81.53 %Female: 65.33 Setting: Long-term care facility (Hong Kong) Mean MMSE: 18.87 Criteria for dementia diagnosis: MMSE of 10-24 and CDR ≥ 0.5	Intervention Length: 12 weeks Type: Other (Tai Chi) Frequency: 3 days/week Session duration: 60 min Volume: 180 min/week	**Comparison group #1:** Type: Other activities (Mahjong) Frequency: 3 days/week Duration: 60 min Intensity: Not reported	Primary Outcome: 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 Secondary Outcome: N/A

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

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

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

Enette et al. (2020)	Type of analysis: Complete-case Follow-up: No Randomization: Individual	Sample Size: 54 Mean Age: 76.5 %Female: 62.86 Setting: Community-dwelling and long-term care facility (France) Mean MMSE: 19.45 Criteria for dementia diagnosis: According to revised DSM-IV criteria Dementia severity: Mild and moderate Type of dementia: AD	Intervention Length: 9 weeks **Intervention #1:** Type: Continuous AT Frequency: 2 days/week Session duration: 30 min Volume: 60 min/week Intensity: 70% HRmax or 50% maximal tolerated power for participants who did not reach at least 85% max HR during the incremental exercise test Adherence Rate: Not reported **Intervention #2:** Type: Intermittent AT Frequency: 2 days/week Session duration: 30 min	Type: Other activities (information sessions) Frequency: 1 day/week Duration: 30 min Intensity: Not reported Adherence Rate: Not reported	Primary Outcome: Non-cognitive function Secondary Outcome: MMSE, Rey Auditory Verbal Learning Test, Digit Span Forward, Digit Span Backward

			Volume: 60 min/week		
			Intensity: 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		
			Adherence Rate: Not reported		
Fonte et al. (2019)*	Type of analysis: ITT Follow-up: Yes, 12 weeks after post-intervention measurement Randomization: Individual	Sample Size: 60 Mean Age: 79.33 %Female: 65 Setting: Community-dwelling (Italy) Mean MMSE: 18.7 Criteria for dementia diagnosis: According to the National Institute on Aging-Alzheimer's Association diagnostic guideline for AD	Intervention Length: 24 weeks Type: MT (AT, RT) Frequency: 3 days/week Session duration: 90 min AT: 45 min RT: 3 sets of 12 reps Volume: 270 min/week	**Comparison group #1:** Type: Usual care Frequency: Not reported Duration: Not reported Intensity: Not reported Adherence Rate: Not reported	Primary Outcome: MMSE, Digit Cancellation Test, ADAS-Cog, Frontal Assessment Battery Secondary Outcome: N/A

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

			Intensity: AT: 70% max HR (or 65% max HR for those on beta-blockers) RT: 85% 1RM Adherence Rate: Not reported	**Comparison group #2:** Type: Cognitive training Frequency: 3 days/week Duration: 90 min Intensity: Not reported Adherence rate: Not reported	
		Dementia severity: Unspecified Type of dementia: AD			
Harris et al. (2017)	Type of analysis: ITT Follow-up: No Randomization: Individual	Sample Size: 16 Mean Age: 83.06 %Female: 63 Setting: Long-term care facility (Canada) Mean MMSE: 12.4 Criteria for dementia diagnosis: Clinical diagnosis of dementia and MMSE < 23 Dementia severity: Unspecified Type of dementia: AD, VCI, FTD, mixed, and unspecified dementia	Intervention Length: 12 weeks Type: AT Frequency: 3 days/week Session duration: 15 min Volume: 45 min/week Intensity: Self-selected pace for 15 min or until they reached moderate breathlessness (measured by talk test)	Type: Other activities (social activities) Frequency: 1 day/week Duration: 30-45 min Intensity: Not reported Adherence Rate: 80%	Primary Outcome: MMSE Secondary Outcome: N/A

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance
placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

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

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

Ho et al. (2020)	Type of analysis: ITT Follow-up: Yes, 12- and 36-weeks after post-intervention measurement Randomization: Individual	Sample Size: 204 Mean Age: 79 %Female: 81.9 Setting: Community-dwelling and long-term care facility (Hong Kong) Mean MMSE: Not reported Criteria for dementia diagnosis: According to DSM-IV or diagnosis of mild neurocognitive disorder according to DSM-V and CDR of 0.5-1 Dementia severity: Very mild and mild Type of dementia: Unspecified	Intervention Length: 12 weeks **Intervention #1:** Type: Other (Dance movement therapy) Frequency: 2 days/week Session duration: 60 min Volume: 120 min/week Intensity: 40-60% VO2max Adherence Rate: Not reported **Intervention #2:** Type: MT (Stretching, joint movements, exercise with towels) Frequency: 2 days/week Session duration: 60 min Volume: 120 min/week	Type: Other activities (wait-list) Frequency: N/A Duration: N/A Intensity: N/A Adherence Rate: N/A	Primary Outcome: Fuld Object Memory Evaluation, Digit Span Forward, Digit Span Backward, Trail Making Test – A and B Secondary Outcome: N/A

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

			Intensity: 40-60% VO2max		
			Adherence Rate: Not reported		
Hsu et al. (2018)	Type of analysis: Complete case Follow-up: No Randomization: Individual	Sample Size: 21 Mean Age: 72 %Female: 61.9 Setting: Community-dwelling (Canada) Mean MMSE: 27.25 Criteria for dementia diagnosis: 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. Dementia severity: Unspecified	Intervention Length: 26 weeks Type: AT Frequency: 3 days/week Session duration: 60 min Volume: 180 min/week Intensity: 60-70% HRR; Borg 14-15 Adherence Rate: 68%	Type: Usual care + educational material Frequency: Not reported Duration: Not reported Intensity: Not reported Adherence Rate: Not reported	Primary Outcome: Eriksen Flanker Task (Congruent and Incongruent) Secondary Outcome: MMSE, MoCA

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

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

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

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

Liu-Ambrose et al. (2016)	Type of analysis: ITT Follow-up: Yes, 26 weeks after post-intervention measurement Randomization: Individual	Sample Size: 71 Mean Age: 74.25 %Female: 51.5 Setting: Community-dwelling (Canada) Mean MMSE: 26.35 Criteria for dementia diagnosis: 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. Dementia severity: Mild Type of dementia: SIVCI	Intervention Length: 26 weeks Type: AT Frequency: 3 days/week Session duration: 60 min Volume: 180 min/week Intensity: 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 Adherence Rate: 68%	Type: Usual care + education Frequency: Not reported Duration: Not reported Intensity: Not reported Adherence Rate: Not reported	Primary Outcome: ADAS-Cog, EXIT-25 Secondary Outcome: Stroop Test, Trail Making Test – A and B, Verbal Digit Span Forward and Backward

Miu et al. (2008)	Type of analysis: Complete case Follow-up: Yes, 12, 26, and 39 weeks after post-intervention measurement Randomization: Individual	Sample Size: 85 Mean Age: 76 %Female: 54 Setting: Community-dwelling (Hong Kong) Mean MMSE: 19.56 Criteria for dementia diagnosis: According to the DSM-IV-TR criteria Dementia severity: Mild and moderate Type of dementia: AD, vascular dementia, mixed dementia, Parkinson's dementia	Intervention Length: 12 weeks Type: AT Frequency: 2 days/week Session duration: 45-60 min Volume: 90-120 min/week Intensity: Not reported Adherence Rate: Not reported	Type: No treatment Frequency: N/A Duration: N/A Intensity: N/A Adherence Rate: N/A	Primary Outcome: MMSE, ADAS-Cog Secondary Outcome: N/A
Pitkälä et al. (2013)****	Type of analysis: ITT Follow-up: No Randomization: Individual	Sample Size: 140 Mean Age: 77.9 %Female: 40 Setting: Community-dwelling (Finland) Mean MMSE: 17.75 Criteria for dementia diagnosis: Diagnosis by a geriatrician or neurologist and according to the NINCDS-ADRDA criteria	Intervention Length: 52 weeks Type: MT Frequency: 2 days/week Session duration: 60 min Volume: 120 min/week Intensity: Not reported	Type: Usual care + materials on nutrition and exercise Frequency: Not reported Duration: Not reported Intensity: Not reported Adherence Rate: Not reported	Primary Outcome: Non-cognitive function Secondary Outcome: MMSE

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

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

			RT: LI - Borg 9-11 HI - Borg 13-16 Adherence Rate: 60.7%		
Steinberg et al. (2009)	Type of analysis: ITT Follow-up: No Randomization: Individual	Sample Size: 27 Mean Age: 75.25 %Female: 70.37 Setting: Community-dwelling (United States) Mean MMSE: 17.8 Criteria for dementia diagnosis: According to the NINCDS-ADRDA criteria Dementia severity: Unspecified Type of dementia: AD	Intervention Length: 12 weeks Type: MT (AT, RT, balance and flexibility) Frequency: 7 days/week Duration: Not reported Volume: Not reported Intensity: Not reported Adherence Rate: Not reported	Type: Other activities (home safety) Frequency: Not reported Duration: Not reported Intensity: Not reported Adherence Rate: Not reported	Primary Outcome: Non-cognitive function Secondary Outcome: MMSE, Boston Naming Test, Hopkins Verbal Learning Test
Stevens et al. (2006)	Type of analysis: Not reported Follow-up: No Randomization: Individual	Sample Size: 75 Mean Age: 80.5 %Female: 74.67 Setting: Long-term care facility (Australia) Mean MMSE: Not reported	Intervention Length: 12 weeks Type: MT (Joint and large muscle group movement) Frequency: 3 days/week	Type: No treatment Frequency: N/A Duration: N/A Intensity: N/A Adherence Rate: N/A	Primary Outcome: Clock Drawing Test Secondary Outcome: N/A

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

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

Adherence Rate:
73%

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

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

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance
placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

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

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance
placed on this supplemental material which has been supplied by the author(s)

Br J Sports Med

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