

Supplementary Table 1: Characteristics of studies included in the meta-analyses.

Study	Setting	Severity of dementia MMSE (SD)	Frequency and format	Tx period (weeks)	Control group	Axs in weeks	N after randomization		Mean age	% female	GEN COG outcomes and calculated mean difference. ^a	Description of Intervention
							IG	CG				
Avila et al (2007) ⁴⁰	2 groups as outpatients, 1 group at home	1) 20 (4), 2) 20.8 (5), 3) 18.4 (5.1)	Group- 60 mins 1 x week, Ind- 40 mins 1 x week	22	1) Gp vs. indiv 2) Gp vs. home 3) Ind vs. home	0, 22	Group 5 Ind 6 Home 5		73.8	82.4	GROUP VS IND ADAS-Cog= -2.16 MMSE= -0.84 GROUP VS HOME: ADAS-Cog= -8 MMSE= 3.2 IND VS HOME ADAS-Cog=-5.84 MMSE=4.04	CS and CR
Baldelli et al (1993) ²⁰	inpatient	IG: 20.1 (4.7) CG:21.3 (5.1)	Group 1 hour 3 x week	12 weeks	NA	0, 12 (post) 24 (f/u)	13	10	84.5	100	MMSE= 7.4 f/u MMSE= 6.5	CS
Baldelli et al (2002) ²¹	inpatient	20.77	Group 1 hour/day 5 days/week	4 weeks	NA	0, 16 (post)	71	16	80	70.1	MMSE= 2.46	CS
Bottino et al (2005) ²²	outpatient	IG:21.29 (3.8) CG-23.5 (3.27)	90 minutes 1 x week	20 weeks	NA	0 and 20 (post)	6	7	73.7	69.2	MMSE= 2.26 ADAS-Cog= -2.6	CS
Breuil et al (1994) ²³	outpatient	>9	10 x 1 hr sessions	5 weeks	NA	0 and 6 (post)	32	29	77.2	60.5	MMS= 2.1	CS:
Buettner et al (2011) ²⁴	care homes	IG:25.2 (3.3) CG:25.4 (2.8)	1 hr 2 x week	4 weeks	Active	0 and 4 (post)	48	48	81.6	80.5	MMSE= 1.55	CS

Burgener et al (2008) ²⁵	community	IG:24.8 (3.5) CG: 22.9 (5.2)	1)taichi- 1 hour, 3 x week. 2)Cog: 90 mins, 2 x week: 3)support group: 90 mins, 2 x week	40 weeks	Active (Ed support	0, 20, 40 (post)	24	19	76.95	47	MMSE= 0.9	CS
Buschert et al (2011) ⁴¹	outpatient	IG:24.5 (1.6) CG: 25.3 (1.5)	Group 20 x 2 hr sessions	24 weeks	Active (attention control)	0, 24 (post)	8	7	75.9	53	ADAS-Cog= -0.7 MMSE= 1.4	MCTS
Chapman et al (2004) ²⁶	community	20.87 (3.55)	Group: 1.5 hour , 1 x week	8 weeks	NA	0, 16 (post), 32 f/u 48 f/u	28	26	76.38	54	MMSE= 0.02 ADAS-Cog= 0.78 32 f/u MMSE= 0.9 32 f/u ADAS-Cog= - 0.52 48 f/u MMSE= 1.92 48 f/u ADAS-Cog= - 3.42	CS
Coen et al (2011) ²⁷	care home	'Mild-mod' (10-23)	14 x 45 min, 2 x week	7 weeks	NA	0 and 7 (post)	14	13	79.85	52	MMSE= 2.9 ADAS-Cog= 2.1	CS
Davis et al (2001) ⁴²	outpatient	IG: 21.84(4.03) CG: 22.78 (4.45)	1 hr, 1 x week	5 weeks	Active	0 and 5 (post prior to crossover)	19	18	70.6	57	MMSE= -0.06	MCTS
Ferrario et al (1991) ³⁸	inpatient (institution)	Range 18-25	Group 1 hour, 5 x week	24 weeks	NA	0, 12, 24	13	6	82.5	42	Clifton Assessment Schedule (CAS)= 1.3	CS

Galante et al (2007) ¹⁶	outpatient (unclear)	IG: 22.9 CG:23.1	Individual 1 hour, 3 x week	4 weeks	Active	0, 4 (post), 12, 36 (f/u)	7	5	76	No info	MODA= -3.5 MMSE= -1.7 12 f/u MMSE=- 2.6 12 f/u MODA= -4.1 36 f/u MMSE= 3.2	CT
Graessel et al (2011) ²⁸	care home	IG: 15.4 (5.4) CG:13.8 (5.4)	Group 2 hrs, 6 days x week	12 months	NA (TAU)	0, 52	50	48	85.1	80	ADAS-Cog= -3.8	CS
Haight et al (2006) ²⁹	care home	Mean 17.8	Intervention takes about 8 hours	8 weeks	NA (TAU)	0, 8 (post)	15	16	unclear-range 60-99	81	MMSE= 7.27	CS
Heiss et al (1994) ¹⁷	outpatient	IG: 20.55 CG: 20.23	Individual 1 hr 2 x week	6 months	ACTIVE (social support)	0, 8,16 and 24 (post)	18	17	66.3	45.5	MMSE= -0.28	CT
Jelcic et al (2012) ¹⁸	outpatient	IG 24.4 (2.8) CG: 25 (2.6)	1 hr, 2 x week	3 months	ACTIVE	0,12 (post), 36(f/u- for IG only)	20	20	82.4	82.5	MMSE= 3	CT
Kawashima et al (2005) ¹⁹	care home	IG 19.9 CG 19.6	Individual 20 mins,2-6 x week	6 months	NA (TAU)	0, 24	16	16	85.7		MMSE= 1.9	CT
Koltai et al (2001) ⁴³	outpatient	IG: 22.9 (3.6) CG: 26.6 (2.5)	5 x 1 hr sessions (group), 'mean =6' (individual)	Unclear- approx 6 weeks	NA (wait list)	0 and post (average 6.3 weeks)	8 (indiv), 8 (group)	8	73.4	No info	MMSE= -0.96	MCTS
Kurz et al (2011) ⁴⁴	outpatient	IG: 25.01 CG: 25.11	1 hr/ week	12 weeks	NA (TAU)	0,12,(post) 36 (f/u)	100	101	73.7	44	36 f/u MMSE= 0.74	CS and CR

Lai et al (2004) ³⁹	care home	IG: 8.3 (5.1), CG 9.3 (5.1), (active) CG:10.7 (6.1) (NA)	30 min, 1 x week	6 weeks	Active and NA	0, 6 (post) 6 (f/u)	36	35, 30 (NA)	85.7	68.3	MMSE= 1.47 (ACTIVE) 0.78 (NA) 6 f/u MMSE (ACT)= 4.39 6 f/u MMSE (NA)= 2.82	CS
Luttenberg et al (2012) ³⁰	care homes	IG: 15.57 (4.83) CG:14.14 (5.45)	Group 2 hrs, 6 x week	12 months	NA (TAU)	0, 88 (f/u)	50	48	84.37	81.4	(f/u) ADAS-Cog=- 3.86	CS
Maci et al (2012) ⁴⁵	outpatient	IG: 17.5 (2.7) CG:18.2 (2.9)	4 hrs, 5 x week	12 weeks	NA (TAU)	0, 12 (post)	7	7	72.65	57	MMSE= 1	MCTS
Niu et al (2010) ⁴⁶	inpatient	IG: 16.93 (3.02) CG:17.31 (3.24)	Individual 2 x 45 min per week	10 weeks	Active (communi cation exercise)	0, 10 (post)	16	16	79.8	21.9	MMSE= 1	MCTS
Onder et al (2005) ³¹	community	IG:20.2 (3.3) CG: 19.9 (3)	Individual 30 mins, 3 x week	25 weeks	NA (TAU)	0 , 25 (post)	79	77	75.8	72	MMSE= 1.3 ADAS-Cog= -2.9	CS
Onor et al (2007) ³²	unclear- community?	IG: 23.1 (4.3) CG: 20 (2.2)	pts: 60 min 3 x week. Carer: 60 min, 1 x week format unclear	16 weeks	NA (TAU)	0, 8, 16 (post)	8	8	70	43.8	MMSE= 0 Total MODA= 1.8	CS
Quayhagen et al (1995) ⁴⁷	community	>90 on Mattis (mild-mod)	60 min, 6 x week	12 weeks	1)ACTIVE 2)NA (wait)	0, 12 (post) 36 (f/u)	25	1) 28 2) 25	73.6	35	Mattis DRS= 5 (active), 7.7 (NA) 36 f/u Mattis=3.8 (active), 10.4 (NA)	MCTS

Requena et al (2006) ³³	Community (day centre)	CS- 19.44 CS + drug- 22.95 Drug- 21.17 Wait-19.39	45 mins, 5 x week, with exercises done at home on weekends	104 weeks	1)NA (drug only) 2)Waiting 3)CS + drug	0, 52, 104 (post)	CS- 18 CS + drug- 20	Drug- 30 Wait- 18	76.97	71.8	MMSE= 5.99 ADAS-Cog= -11.94	CS
Spector et al (2001) ³⁴	Day hospital and residential home	IG:11.5 (4.4), CG: 15.5 (4.4)	Group 15x 45 min twice weekly sessions	7.5 weeks	NA (TAU)	0, approx 7.5 (post)	21	14	85.7	No info	MMSE= 3.1 ADAS-Cog= -5.3	CS
Spector et al (2003) ³⁵	Day centres and residential homes	IG:14.2 (3.9) CG: 14.8 (3.8)	Group 2 x per week for 45 min per session	7 weeks	NA (TAU)	0, 7 (post)	115	86	85.3	78.6	MMSE= 1.3 ADAS-Cog= -2.2	CS
Tadaka et al (2007) ³⁶	Day centres	AD IG:14.6 (5.3) CG: 14.9 (4.6) VD IG:19.8 (5) CG- 18.2 (5.4)	60-90 minS, 1 X week	8 weeks	NA (TAU)	0, 8 (post), 24 (f/u)	30 (12 AD, 18 VD)	30 (12 AD, 18 VD)	83.1	70	MMSE= 0.1 (AD) 3.6 (VD) 24 f/u MMSE = 2.7 (VD), -0.1 (AD)	CS
Tarraga et al (2006) ⁴⁸	Day centre	CT/CS/drug 20.6 CS/drug: 22.5 Drug: 22.83	CT=3 x 20 mins per week (individual computer based) CS (group) 3.5 hours, 5 x week	24 weeks	NA (drug only) OTHER MCTS vs. CT	0, 12, 24 (post)	18 MCTS/D rug 16: CS/Drug	12: drug	76.7	84.8	CS+ DRUG VS DRUG: MMSE= 1.63 ADAS-Cog= -0.71 MCTS + DRUG VS DRUG MMSE=1.47 ADAS-Cog= -1.07 MCTS VS CS MMSE= 1.34 ADAS-Cog= -2.19	CS MCTS

Wang et al (2007) ³⁷	Care homes	IG: 14.33 CG: 14.33	60 min, 1 x week	8 weeks	NA (TAU)	0 and 8 (post)	51	51	79.34	51	MMSE= 1.88	CS
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Notes: IG= Intervention Group, CG= Control Group, SD= standard deviation, Tx= Treatment, Ax= Assessments, N=number of participants, GEN COG= general cognitive outcome measure, Gp= group, Ind= Individual, NA- non-active control, TAU= Treatment as usual, post= post-intervention, f/u= follow-up, MMSE- Mini mental state examination, ADAS-Cog- Alzheimer's Disease Assessment Scale- cognitive subscale, CS= cognitive stimulation, CT= cognitive training, MCTS= mixed cognitive stimulation and training, AD= Alzheimer's Disease, VD= vascular dementia, MODA= Milan Overall Dementia Assessment , MATTIS DRS= Mattis dementia rating scale

^a MMSE/CAS/MODA/MATTIS- positive score favours intervention. ADAS-Cog- negative score favours intervention.

Chapman et al (2004)	adequate	adequate	adequate	partially adequate	adequate	0	D: uneven number of dropouts in each group (8 in exp group, 5 in donepezil only group)
Coen et al (2011)	inadequate/unclear	inadequate/unclear	adequate	adequate	adequate	2	No information about A or B
Davis et al (2001)	inadequate/unclear	inadequate/unclear	partially adequate	partially adequate	adequate	2	No information about A or B; 4 patients did not crossover from the placebo group due to lack of interest in continuing the study
Ferrario et al 1991	inadequate/unclear	inadequate/unclear	inadequate/unclear	adequate	adequate	3	No information for A,B or C
Galante et al (2007)	partially adequate	partially adequate	adequate	inadequate/unclear	adequate	1	A and B states 'randomly assigned to one of two groups in order of recruiting' D: 1 drop out in control group, leaving groups mismatched (7 vs. 4), dropouts not included in analysis
Graessel et al (2011)	adequate	adequate	adequate	adequate	adequate	0	
Haight et al (2006)	inadequate/unclear	inadequate/unclear	inadequate/unclear	inadequate/unclear	adequate	4	No information about A, B – states 'were assigned randomly by the researchers' no information about C or D
Heiss et al (1993)	inadequate/unclear	inadequate/unclear	inadequate/unclear	inadequate/unclear	adequate	4	No information about A,B, C or D
Jelcic et al (2012)	adequate	inadequate/unclear	adequate	adequate	adequate	1	Unclear info about B
Kawashima et al (2005)	inadequate/unclear	inadequate/unclear	inadequate/unclear	adequate	adequate	3	No information about A, B or C
Koltai et al (2001)	inadequate/unclear	inadequate/unclear	inadequate/unclear	partially adequate	partially adequate	3	No info about A, B or C. D: some missing data but probably unrelated to study. E: reports results stated in methods, however adds subsequent subjective 'anosognosia rating' and re analyses some results with this
Kurz et al (2012)	adequate	adequate	adequate	adequate	adequate	0	
Lai et al (2004)	inadequate/unclear	inadequate/unclear	adequate	partially adequate	adequate	2	No information about A and B- just states that 'were randomly assigned to groups'
Luttenberger et al (2012)	adequate	adequate	adequate	partially adequate	adequate	0	

Maci et al (2012)	adequate	partially adequate	adequate	adequate	adequate	0	
Niu et al (2010)	adequate	adequate	adequate	adequate	adequate	0	
Onder et al (2005)	adequate	adequate	adequate	adequate	adequate	0	
Onor et al (2007)	inadequate/ unclear	inadequate/ unclear	inadequate/ unclear	adequate	adequate	3	No information about A,B just states that 'simple randomisation was used' No information about C
Quayhagen et al (1995)	inadequate/ unclear	inadequate/ unclear	partially adequate	inadequate/ unclear	partially adequate	3	Unclear information about A,B or D
Requena et al (2004 and 2006)	inadequate/ unclear	inadequate/ unclear	inadequate/ unclear	inadequate/ unclear	adequate	4	A and B 'subjects were randomly distributed in groups at the time they arrived at the centre': No information/unclear C and D
Spector et al (2003)	adequate	adequate	adequate	inadequate/ unclear	adequate	1	No information about D
Spector et al (2001)	adequate	adequate	inadequate/ unclear	partially adequate	adequate	1	C: outcome measures not blinded
Tadaka et al (2007)	adequate	partially adequate	adequate	inadequate/ unclear	adequate	1	Unclear information for D
Tarraga et al (2006)	inadequate/ unclear	inadequate/ unclear	inadequate/ unclear	partially adequate	partially adequate	3	Unclear/no information about A,B and C
Wang et al (2007)	partially adequate	inadequate/ unclear	partially adequate	partially adequate	adequate	1	B- unclear