

## APPENDICES

### Appendix A. Reviews Used for Cross-Referencing

- Acevedo, A., & Loewenstein, D. A. (2007). Nonpharmacological cognitive interventions in aging and dementia. *Journal of Geriatric Psychiatry and Neurology*, 20(4), 239-249. doi:10.1177/0891988707308808
- Angevaren, M., Aufdemkampe, G., Verhaar, H. J. J., Aleman, A., & Vanhees, L. (2008). Physical activity and enhanced fitness to improve cognitive function in older people without known cognitive impairment. *Cochrane Database of Systematic Reviews*, Issue 3. Art. No.: CD005381. doi:10.1002/14651858.CD005381.pub3
- Ballesteros, S., Kraft, E., Santana, S., & Tziraki, C. (2015). Maintaining older brain functionality: A targeted review. *Neuroscience and Biobehavioral Reviews*, 55, 453-477. doi:10.1016/j.neubiorev.2015.06.008
- Belleville, S. (2008). Cognitive training for persons with mild cognitive impairment. *International Psychogeriatrics*, 20(1), 57-66. doi:10.1017/S104161020700631X
- Bherer, L. (2015). Cognitive plasticity in older adults: Effects of cognitive training and physical exercise. *Annals of the New York Academy of Sciences*, 1337(The Neurosciences and Music V), 1-6. doi:10.1111/nyas.12682
- Brehmer, Y., Kalpouzos, G., Wenger, E., & Lövdén, M. (2014). Plasticity of brain and cognition in older adults. *Psychological Research*, 78(6), 790-802. doi:10.1007/s00426-014-0587-z
- Brodziak, A., Wolińska, A., Kołat, E., & Różyk-Myrta, A. (2015). Guidelines for prevention and treatment of cognitive impairment in the elderly. *Medical Science Monitor*, 21, 585-597. doi:10.12659/MSM.892542
- Buchner, D. M., Beresford, S. A. A., Larson, E. B., LaCroix, A. Z., & Wagner, E. H. (1992). Effects of physical activity on health status in older adults II: Intervention studies. *Annual Reviews of Public Health*, 13, 469-488. doi:10.1146/annurev.pu.13.050192.002345
- Chang, Y.-K., Pan, C.-Y., Chen, F.-T., Tsai, C.-L., & Huang, C.-C. (2012). Effect of resistance-exercise training on cognitive function in healthy older adults: A review. *Journal of Aging and Physical Activity*, 20(4), 497-517. doi:10.1123/japa.20.4.497
- Colcombe, S. J., & Kramer, A. F. (2003). Fitness effects on the cognitive function of older adults: A meta-analytic study. *Psychological Science*, 14(2), 125-130. doi:10.1111/1467-9280.t01-1-01430
- Etnier, J. L., Nowell, P. M., Landers, D. M., & Sibley, B. A. (2006). A meta-regression to examine the relationship between aerobic fitness and cognitive performance. *Brain Research Reviews*, 52(1), 119-130. doi:10.1016/j.brainresrev.2006.01.002
- Fowler, S. B. (2011). Cognition training interventions for healthy older people and older people with mild cognitive impairment. *Clinical Nurse Specialist*, 25(4), 178-179. doi:10.1097/NUR.0b013e318222a671
- Gates, N., Fiatarone Singh, M. A., Sachdev, P. S., & Valenzuela, M. (2013). The effect of exercise training on cognitive function in older adults with mild cognitive impairment: A meta-analysis of randomized controlled trials. *The American Journal of Geriatric Psychiatry*, 21(11), 1086-1097. doi:10.1016/j.jagp.2013.02.018
- Gobbo, S. (2014). Effects of exercise on dual-task ability and balance in older adults: A systematic review. *Archives of Gerontology and Geriatrics*, 58(2), 177-187. doi:10.1016/j.archger.2013.10.001.

- Hindin, S. B., & Zelinski, E. M. (2012). Extended practice and aerobic exercise interventions benefit untrained cognitive outcomes in older adults: A meta-analysis. *Journal of the American Geriatrics Society*, *60*(1), 136-141. doi:10.1111/j.1532-5415.2011.03761.x
- Karr, J. E., Areshenkoff, C. N., Rast, P., & Garcia-Barrera, M. A. (2014). An empirical comparison of the therapeutic benefits of physical exercise and cognitive training on the executive functions of older adults: A meta-analysis of controlled trials. *Neuropsychology*, *28*(6), 829-845. doi:10.1037/neu0000101
- Kelly, M. E., Loughrey, D., Lawlor, B. A., Robertson, I. H., Walsh, C., & Brennan, S. (2014a). The impact of cognitive training and mental stimulation on cognitive and everyday functioning of healthy older adults: A systematic review and meta-analysis. *Ageing Research Reviews*, *15*, 28-43. doi:10.1016/j.arr.2014.02.004
- Kelly, M. E., Loughrey, D., Lawlor, B. A., Robertson, I. H., Walsh, C., & Brennan, S. (2014b). The impact of exercise on the cognitive functioning of healthy older adults: A systematic review and meta-analysis. *Ageing Research Reviews*, *16*, 12-31. doi:10.1016/j.aar.2014.05.002
- Klimova, B., Valis, M., & Kuca, K. (2017). Cognitive decline in normal aging and its prevention: A review on non-pharmacological lifestyle strategies. *Clinical Interventions in Aging*, *12*, 903-910. doi:10.2147/CIA.S132963
- Kueider, A. M., Parisi, J. M., Gross, A. L., & Rebok, G. W. (2012). Computerized cognitive training with older adults: A systematic review. *Public Library of Science*, *7*(7), 1-13. doi:10.1371/journal.pone.0040588
- Kurz, A. F., Leucht, S., & Lautenschlager, N. T. (2011). The clinical significance of cognition-focused interventions for cognitively impaired older adults: A systematic review of randomized controlled trials. *International Psychogeriatrics*, *23*(9), 1364-1375. doi:10.1017/S1041610211001001
- Lampit, A., Hallock, H., & Valenzuela, M. (2014). Computerized cognitive training in cognitively healthy older adults: A systematic review and meta-analysis of effect modifiers. *PLoS Medicine*, *11*(11), e1001756. doi:10.1371/journal.pmed.1001756
- Law, L. L. F., Barnett, F., Yau, M. K., & Gray, M. A. (2014). Effects of combined cognitive and exercise interventions on cognition in older adults with and without cognitive impairment: A systematic review. *Ageing Research Reviews*, *15*, 61-75. doi:10.1016/j.arr.2014.02.008
- Lehert, P., Villaseca, P., Hogervorst, E., Maki, P. M., & Henderson, V. W. (2015). Individually modifiable risk factors to ameliorate cognitive aging: A systematic review and meta-analysis. *Climacteric*, *18*(5), 678-689. doi:10.3109/13697137.2015.1078106
- Martin, M., Clare, L., Altgassen, A. M., Cameron, M. H., & Zehnder, F. (2011). Cognition-based interventions for healthy older people and people with mild cognitive impairment. *Cochrane Database of Systemic Reviews*, *1*(1), 1-51. doi:10.1002/14651858.CD006220.pub2
- McNeely, M. E., Duncan, R. P., & Earhart, G. M. (2015). Impacts of dance on non-motor symptoms, participation, and quality of life in Parkinson disease and healthy older adults. *Maturitas*, *82*(4), 336-341. doi:10.1016/j.maturitas.2015.08.002
- Miller, D. I., Taler, V., Davidson, P. S. R., & Messier, C. (2012). Measuring the impact of exercise on cognitive aging: Methodological issues. *Neurobiology of Aging*, *33*(3), 622.e629-622.e643. doi:10.1016/j.neurobiolaging.2011.02.020

- Mowszowski, L., Batchelor, J., & Naismith, S. L. (2010). Early intervention for cognitive decline: Can cognitive training be used as a selective prevention technique? *International Psychogeriatrics*, 22(4), 537-548. doi:10.1017/S1041610209991748
- Mowszowski, L., Lampit, A., Walton, C. C., & Naismith, S. L. (2016). Strategy-based cognitive training for improving executive functions in older adults: A systematic review. *Neuropsychology Review*, 26(3), 252-270. doi:10.1007/s11065-016-9329-x
- Netto, T. M., Greca, D. V., Zimmermann, N., Oliveira, C., Fonseca, R. P., & Landeira-Fernandez, J. (2010). Working memory intervention programs for adults: A systematic review. *Dementia & Neuropsychologia*, 4(3), 222-231. doi:10.1590/S1980-57642010DN40300011
- Noice, T., Noice, H., & Kramer, A. F. (2013). Participatory arts for older adults: A review of benefits and challenges. *The Gerontologist*, 54(5), 741-753. doi:10.1093/geront/gnt138
- Noice, T., Noice, H., & Kramer, A. F. (2015). Theatre arts for improving cognitive and affective health. *Activities, Adaptation & Aging*, 39(1), 19-31. doi:10.1080/01924788.2015.994440
- Paterson, D. H., & Warburton, D. E. R. (2010). Physical activity and functional limitations in older adults: A systematic review related to Canada's Physical Activity Guidelines. *International Journal of Behavioral Nutrition and Physical Activity*, 7, 38. doi:10.1186/1479-5868-7-38
- Reijnders, J., van Heugten, C., & van Boxtel, M. (2013). Cognitive interventions in healthy older adults and people with mild cognitive impairment: A systematic review. *Ageing Research Reviews*, 12, 263-275. doi:10.1016/j.arr.2012.07.003
- Repetto, C., Serino, S., Macedonia, M., & Riva, G. (2016). Virtual reality as an embodied tool to enhance episodic memory in elderly. *Frontiers in Psychology*, 7(1839), 1-4. doi:10.3389/fpsyg.2016.01839
- Schaefer, S., & Schumacher, V. (2011). The interplay between cognitive and motor functioning in healthy older adults: Findings from dual-task studies and suggestions for intervention. *Gerontology*, 57(3), 239-246. doi:10.1159/000322197
- Schneider, N., & Yvon, C. (2013). A review of multidomain interventions to support healthy cognitive ageing. *The Journal of Nutrition, Health & Aging*, 17(3), 252-257. doi:10.1007/s12603-012-0402-8
- Shah, T. M., Weinborn, M., Verdile, G., Sohrabi, H. R., & Martins, R. N. (2017). Enhancing cognitive functioning in healthy older adults: A systematic review of the clinical significance of commercially available computerized cognitive training in preventing cognitive decline. *Neuropsychology Review*, 27, 62-80. doi:10.1007/s11065-016-9338-9
- Snowden, M., Steinman, L., Mochan, K., Grodstein, F., Prohaska, T. R., Thurman, D. J., . . . Anderson, L. A. (2011). Effect of exercise on cognitive performance in community-dwelling older adults: Review of intervention trials and recommendations for public health practice and research. *Journal of the American Geriatric Society*, 59(4), 704-716. doi:10.1111/j.1532-5415.2011.03323.x
- Toril, P., Reales, J. M., & Ballesteros, S. (2014). Video game training enhances cognition of older adults: A meta-analytic study. *Psychology and Aging*, 29(3), 706-716. doi:10.1037/a0037507
- Verhaeghen, P., Steitz, D. W., Sliwinski, M. J., & Cerella, J. (2003). Aging and dual-task performance: A meta-analysis. *Psychology and Aging*, 18(3), 443-460. doi:10.1037/0882-7974.18.3.443

- Wayne, P. M., Walsh, J. N., Taylor-Piliae, R. E., Wells, R. E., Papp, K. V., Donovan, N. J., & Yeh, G. Y. (2014). Effect of tai chi on cognitive performance in older adults: Systematic review and meta-analysis. *Journal of the American Geriatrics Society*, 62(1), 25-39. doi:10.1111/jgs.12611
- Young, J., Angevaren, M., Rusted, J., & Tabet, N. (2015). Aerobic exercise to improve cognitive function in older people without known cognitive impairment. *Cochrane Database of Systematic Reviews*(4), CD005381. doi:10.1002/14651858.CD005381.pub4

## Appendix B. Quality Score Assessment

Question	Rating	Contents
1. Was the method of randomization adequate?	3-Yes 2-Unclear 1-No	<p>A random (unpredictable) assignment sequence. Examples of adequate methods are coin toss (for studies with 2 groups), rolling a dice (for studies with 2 or more groups), drawing of balls of different colors, drawing of ballots with the study group labels from a dark bag, computer-generated random sequence, pre-ordered sealed envelopes, sequentially-ordered vials, telephone call to a central office, and pre-ordered list of treatment assignments.</p> <p>Examples of inadequate methods are: alternation (e.g., rotating from one study group to the next based on last randomization), birth date, social insurance/security number, date in which they are invited to participate in the study, and hospital registration number.</p>
2. Was the treatment allocation concealed?	3-Yes 2-Unclear 1-No	Study group assignment was done by an independent person. This person has no information about the persons included in the trial and has no influence on the assignment sequence or on the decision about eligibility of the patient.
3. Were sufficient details of the intervention provided?	3-Yes 2-Unclear 1-No	<p>“Sufficient details” mean that you could replicate the intervention. Information such as description of the intervention, duration, and amount of training (dosage) should be provided.</p> <p>The answer should be “yes” for this item if these data were either described in the report or made available for each group (reference to a preliminary report, online addendum etc.)</p>
4. Were the testers blinded to the randomization (which participant was in which group)?	3-Yes 2-Unclear 1-No	
5. Was the drop-out rate described and similar across group?	3-Yes 2-Unclear 1-No	
6. Were all participants analyzed in the group to which they were allocated?	3-Yes 2-Unclear 1-No	Were Intention-to-Treat (ITT) analyses conducted and reported

7. Were all study groups equal at baseline?	3-Yes 2-Unclear 1-No	Analyses on demographics and key variables of interest in article (IVs and DVs) were not statistically different at baseline (tested). If they were, this data was adjusted for in the models (e.g., covariate).
8. Was the compliance acceptable (and if (a) more than one treatment group or (b) an active control group) similar across all groups?	3-Yes 2-Unclear 1-No	The reviewer determines if the compliance with the interventions is acceptable (based on the reported intensity, duration, number and frequency of sessions) for both the intervention and active control groups. For example, physiotherapy treatment is usually administered over several sessions; therefore it is necessary to assess how many sessions each patient attended. For single session interventions (e.g., surgery), this item is irrelevant. <i>Note- put aside articles that are unsure about- we can discuss as a group</i>
9. Was the timing of the outcome assessment similar in all groups?	3-Yes 2-Unclear 1-No	Timing of outcome assessment should be identical for all intervention groups and for all important outcome assessments. If not exactly the same, was this adjusted for in analyses (e.g., random-effects models vs. ANCOVA)
10. Are reports of the study free of suggestion of selective outcome reporting?	3-Yes 2-Unclear 1-No	Are all hypothesized outcomes within the publication clearly presented, or did the article focus solely on the ‘positive’ results

Total Score: \_\_\_\_\_ (range of 3 out of possible 30)

Note. Methodological quality was modified from the 2009 updated method guidelines for systematic reviews in the Cochrane Back Review Group (Furlan, Pennick, Bombardier, & van Tulder, 2009) and PEDro scale (Maher, Sherrington, Hebert, & Moseley, 2003).

## Appendix C. Cognitive Measures Sorted into Domains

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### ***Cognitive Speed: Speed at which mental activities are performed***

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Delis-Kaplan Executive Function Scale (DKEFS) Processing Speed Composite (Trailmaking Task 1-3, D-KEFS Color-Word Interference 1-2)

Digit Symbol Coding

Local or Mixing Costs (Error %s)

Hand-Eye Coordination

Information Processing Speed Composite (Mindstreams Battery)

Mean Reaction Time (including costs)

Naming

Pattern Comparison Test (RT)

Reaction Time (both simple and choice)

Reaction Time (dual task paradigm)

Response Time

Speed of Performance

Speed of Visual-Spatial Information Processing (composite of reaction time [RT], spatial perception, visual perception)

Standard deviation of reaction time

Symbol Search

Total Reaction Time

Toulouse-Pieron Errors

Trailmaking Task A

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### ***(Psycho)motor Function: Capacity to control sensorimotor abilities***

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(Finger) Tapping

Finger Tracing Accuracy

Four Choice Stepping Reaction Time

Motor Time

Movement (From 5-Cog Test)

Premotor Time

Rey-O Figure Immediate Recall

Total Reaction Time (Panton et al., 1990)

Speed of Movement

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### ***Verbal Attention: Capacity to be verbally receptive to novel stimuli with low to moderate inhibition demands***

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Selective Auditory Attention

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### ***Visual Attention: Capacity to be visually receptive to novel stimuli with low to moderate inhibition demands***

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Attention (From 5-Cog Test)

Avoiding Distractors

Covert Orienting (Invalid-Valid)  
 Cross-Modal or Within-Modality Distraction (reaction time [RT], accuracy)  
 Digit Cancellation Task  
 Digit Symbol Substitution  
 Divided Attention  
 Dual-Task Test  
 Modified Useful Field of View (UFOV)  
 Selective Visual Attention  
 Shifting (Shatil, 2013)  
 Symbol Digit Modalities Test (SDMT)  
 Toulouse-Pieron Cancellation numbers  
 Useful Field of View (UFOV) Subtests 2-4 (composite)  
 Useful Field of View (UFOV) 2: Processing Speed  
 Useful Field of View (UFOV) 3: Divided Attention  
 Useful Field of View (UFOV) 4: Selective Attention  
 Digit Vigilance Test  
 Visual Scanning  
 Visual Search  
 Visuospatial Cognitive Performance Test  
 Within-Modality Distractor Task (reaction time [RT], Accuracy)  
 Yamaguchi Kanji-Symbol Substitution Test

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***Multimodal Attention:*** Capacity to be verbally and visually receptive to novel stimuli with low to moderate inhibition demands

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Divided Attention (Auditory and Visual) Task  
 Divided Attention

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***Cognitive Inhibition:*** Capacity to focus on relevant stimuli while suppressing competing distractions

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Adjacency  
 Delis-Kaplan Executive Function Scale (DKEFS) Design Fluency 3  
 Delis-Kaplan Executive Function Scale (DKEFS) Flexibility Composite (Color-Word Interference Tasks 3-4)  
 Eriksen Flanker Task  
 Go/NoGo  
 Inhibition (CogniFit Neuropsychological Battery)  
 Runs  
 Stroop Color Word Test (Errors, Interference)  
 Turning Point Index

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***Verbal Immediate Recall:*** Capacity to temporarily hold verbal information from attention processes (also short-term memory)

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Associative Learning



Auditory-Verbal Learning Test (AVLT)  
 Brown-Peterson Test  
 Buschke-Fuld Immediate Total  
 Buschke Selective Reminding Task Short-Term Retrieval  
 Composite of Hopkins Verbal Learning Test (HVLT), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)  
 Digit Span Forward  
 Digit Symbol Forward  
 East Boston Memory Test- Immediate  
 Face-Name Learning  
 Figure-Word Pairing  
 Free and Cued Selective Reminding Task Short Delay (FCSRT)  
 Hopkins Verbal Learning Test (HVLT) Immediate Recall  
 Hopkins Verbal Learning Test- Revised (HVLT-R)  
 Immediate Memory  
 Immediate Free Recall  
 Immediate Word Recall  
 Listening Comprehension: True/False  
 List Learning (Object, Grocery, Word; Cavallini et al., 2015)  
 Logical Memory I  
 Logical Stories Test  
 Recall of Abstract Words  
 Recall of Concrete Words  
 Rey Auditory Verbal Learning Test (RAVLT) Trail I-V  
 Rey Auditory Verbal Learning Test (RAVLT) Immediate Recall  
 Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Immediate Memory  
 Rey Auditory Verbal Learning Test (RAVLT): Words Learned and Recalled  
 Rivermead Behavioral Memory Test (RBMT): Immediate Recall  
 Ross Information Processing Assessment Memory (RIPA) Immediate Recall  
 Rey Auditory Verbal Learning Test (RAVLT) Total Score  
 Text Learning  
 Verbal Paired Associates  
 Word List Learning

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***Visual Immediate Recall:** Capacity to temporarily hold visual information from attention processes (also short-term memory)*

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Letter-Location Association Recall Task  
 Benton Visual Retention  
 Brief Visuospatial Memory Test-Revised (BVMT-R)  
 Corsi Block Tapping Forward

Digit Symbol Test Immediate  
 Doors and People Test: Visual Recognition Subtest  
 Immediate Recognition  
 Letter Memory  
 Reading Comprehension of Expository Texts  
 Rey-O Immediate Recall  
 Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Visuospatial  
 and Constructional Subscale  
 Spatial Span  
 Visual Reproduction

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***Multimodal Immediate Recall:*** Capacity to temporarily hold verbal and visual information  
 from attention processes (also short-term memory)

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Composite of Buschke-Fuld, Rey-Osterrieth Copy, and Verbal Pairs

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***Verbal Working Memory:*** Capacity to successfully hold and manipulate verbal information

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Alpha Span Test  
 Auditory (Non-Linguistic) Working Memory  
 Auditory digit span backward  
 Categorization Working Memory Span (CWMS)  
 Coupon  
 Cued Delayed Recall Test  
 Digit Span Test  
 Forward and Backward Digit Span  
 Letter-Number Sequencing  
 Mean Repetition Gap  
 Mental Rotation  
 Redundancy  
 Serial 7s  
 Wechsler Memory Scale-III (WMS-III) Digits Backward  
 Working Memory Composite (Digit Span Forward & Backward, Letter-Number Sequencing)  
 Working Memory Updating

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***Visual Working Memory:*** Capacity to successfully hold and manipulate visual information

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Backward Spatial Span  
 Corsi Block Tapping Backward  
 Corsi Block Tapping Similarities  
 Dot Matrix Test  
 N-Back Task (including 1-back, 2-back, 3-back)  
 Visual digit span backward

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***Verbal Delayed Recall:*** Capacity to recall verbal information after a delay (also long-term  
 memory)

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Autobiographical Memory Interview

Buschke Selective Reminding Task List Learning  
 Buschke Selective Reminding Task Total Recall  
 Delayed Free Recall  
 East Boston Memory Test- Delayed  
 Free Reminding Test (RL/RI-16)  
 Free and Cued Selective Reminding Task (FCSRT) Long Delay  
 Grocery List Recall  
 Hopkins Verbal Learning Test (HVLТ) Delayed Recall  
 Hopkins Verbal Learning Test- Revised (HVLТ-R) Delayed Recall  
 Logical Memory II  
 Memory Composite (Mindstreams Battery)  
 Memory and Learning (From 5-Cog Test)  
 Names and Faces Recall  
 Paragraph Recall (Wechsler Memory Scale)  
 Phone Number Recall  
 Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Delayed  
     Memory  
 Remote Memory Word Association Task  
 Rey Auditory Verbal Learning Test (RAVLT) Delayed Recall  
 Rey Auditory Verbal Learning Test (RAVLT) Delayed Recognition  
 Rivermead Behavioral Memory Test (RBMT) Delayed Recall  
 Ross Information Processing Assessment (RIPA) Recent Memory Subscale  
 Verbal Paired Associates- Delay  
 Word List Delayed Recall  
 12-word Recall from Batterie d'Efficiency Mnesique (BEM-144)  
 Unrelated List Recall

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***Visual Delayed Recall:** Capacity to recall visual information after a delay (also long-term memory)*

Digit Symbol Test Delay  
 Global Visual Memory (Composite of Visual Working and General Memory)  
 Visual Reproduction Delay

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***Multimodal Delayed Recall:** Capacity to recall verbal and visual information after a delay (also long-term memory)*

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Composite of Delayed Buschke-Fuld, Delayed Rey-Osterrieth, and Verbal Pairs

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***Executive Function:** High-level cognitive function that may include elements of attention, cognitive inhibition, working memory, planning, reasoning, cognitive control, and/or cognitive flexibility*

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Abstract Reasoning Subtest from Ross Information Processing Test (RIPA)  
 Animal Names  
 Cattell Culture Fair Test

Composite of Processing Speed, Memory, and Executive Function  
 Composite Score of Visuospatial Skills Composite (Block Design, Matrix Reasoning)  
 Composite Score of Word Series, Letter Series, and Letter Sets  
 Controlled Oral Word Association Task (COWAT)  
 Delis-Kaplan Executive Function Scale (DKEFS) Design Fluency 1-2  
 Delis-Kaplan Executive Function Scale (DKEFS) Trailmaking Task 4  
 Delis-Kaplan Executive Function Scale (DKEFS) Tower Test  
 Delis-Kaplan Executive Function Scale (DKEFS) Letter Fluency Score  
 Direction Headings  
 Extended Global Cognition Composite (Controlled Oral Word Association Task, Boston  
 Naming Test, Recognition Memory Test, WAIS-IV Matrix Reasoning)  
 Executive Function Composite (Stroop and CANTAB Stockings of Cambridge)  
 Frontal Assessment Battery at Bedside (FAB)  
 Language Fluency (From 5-Cog Test)  
 Letter Sets  
 Listening Comprehension: Map Drawing  
 Matrix Reasoning  
 Means-End Problem-Solving Procedure (MEPS)  
 Planning (Maze Test)  
 Rate of Stroop Task  
 Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Auditory  
 Memory and Attention Subtest  
 Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Attention  
 Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Language  
 Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Total Score  
 Ross Information Processing Assessment (RIPA) Organization  
 Ross Information Processing Assessment (RIPA) Problem Solving and Abstract Reasoning  
 Subtest  
 Ross Information Processing Assessment (RIPA) Total Score  
 Self-Ordered Pointing Task  
 Semantic Verbal Fluency (Semantic, Letter, or Category)  
 Set Shifting  
 Task Switching  
 Time Estimation  
 Trailmaking Task B  
 Trailmaking Task B - Trailmaking Task A  
 Visual Reasoning Test  
 Walk & Talk Paradigm  
 Wisconsin Card-Sorting Task

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***Subjective Cognition: Self-reported cognitive function***

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Cognitive Self-Report Questionnaire (CSRQ-25)  
 Cognitive Self-Report Questionnaire (CSRQ-25): Cognitive Subscale  
 Subjective Memory Complaint  
 Memory Decline Index  
 Memory Self-Efficacy Questionnaire (MSEQ)  
 Metamemory in Adulthood Questionnaire  
 Self-reported Memory  
 Self-reported Concentration

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***Dementia Status: Screening tools used to assess dementia risk***

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Alzheimer Disease Assessment Scale (ADAS-Cog)  
 Mini-Mental Status Examination (MMSE), including Korean translation (MMSE-K) and  
 Spanish translation (Mini-Mental Cognitive Examination)  
 Clock Drawing  
 Hasegawa Dementia Scale-Revised  
 Ross Information Processing Assessment (RIPA)  
 Touch Panel-type Dementia Assessment Scale (TDAS)  
 Touch-M  
 Visuospatial Cognition (from 5-Cog Test)  
 Modified Mini-Mental Status Examination (3MSE)

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***Verbal Perception: Simple verbal information processing***

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Cancellation Test  
 Number Comparison  
 Ross Information Processing Assessment (RIPA) Auditory Processing Subscale

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***Visual Perception: Visual information processing ranging from simple to complex processing***

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Motor-Free Visual Perception Test (MVPT-3)

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*Note.* Definitions were modified from existing neuropsychological references (Lezak et al., 2004).

## Appendix D. Intervention Effects on Cognitive Outcomes

<b>Study</b>	<b>Cognitive domain</b>	<b>Measure</b>	<b>Imm. transfer</b>	<b>LT transfer</b>
<b>Cognitively-Stimulating Activities: Education Interventions</b>				
de Medeiros et al. (2011)	Visual Immediate Recall	Brief Visuospatial Memory Test-Revised (BVMT-R)	N	N
	Verbal Delayed Recall	Autobiographical Memory Interview	N	N
	Verbal Delayed Recall	Remote Memory Word Association Task	N	N
	Verbal Delayed Recall	Hopkins Verbal Learning Test-Revised (HVLT-R)	N	N
Klusmann et al. (2010)	Cognitive Inhibition	Stroop Task	N	NA
	Verbal Immediate Recall	Rivermead Behavioral Memory Test (RBMT): Immediate Recall		Y NA
	Verbal Immediate Recall	Free and Cued Selective Reminding Task Short Delay	N	NA
	Verbal Delayed Recall	Rivermead Behavioral Memory Test (RBMT) Delayed Recall		Y NA
	Verbal Delayed Recall	Free and Cued Selective Reminding Task Long Delay		Y NA
	Executive Function	Semantic Verbal Fluency	N	NA
	Executive Function	Trailmaking Task B controlling for Task A		Y NA
Klusmann et al. (2011)	Subjective Cognition	Self-Reported Memory		Y NA
	Subjective Cognition	Self-Reported Concentration		Y NA
<b>Cognitively-Stimulating Activities: Theatre Interventions</b>				

Noice & Noice (2009)	Verbal Immediate Recall	Immediate Word Recall		Y	NA
	Verbal Immediate Recall	Digit Span Forward		N	NA
	Verbal Immediate Recall	East Boston Memory Test- Immediate		N	NA
	Verbal Working Memory	Digit Span Backward		N	NA
	Verbal Delayed Recall	East Boston Memory Test- Delayed		Y (no-contact only)	NA
	Verbal Delayed Recall	Delayed Word Recall		Y	NA
	Executive Function	Verbal Fluency		Y	NA
	Executive Function	Means-End Problem-Solving Procedure (MEPS)		Y	NA
Noice & Noice (2013)	Verbal Immediate Recall	Immediate Word Recall		Y	NA
	Verbal Immediate Recall	East Boston Memory Test- Immediate		N	NA
	Verbal Delayed Recall	East Boston Memory Test- Delayed		N	NA
	Verbal Delayed Recall	Delayed Word Recall		N	NA
	Executive Function	Verbal Fluency		Y	NA
	Executive Function	Means-End Problem-Solving Procedure (MEPS)		Y	NA
<b>Cognitively-Stimulating Activities: Stress-Reduction Training</b>					
Galvin et al. (2006)	Cognitive Speed	Trailmaking Task A		Y	NA
	Verbal Immediate Recall	Rey Auditory Verbal Learning Test (RAVLT) Immediate Recall		N	NA

	Verbal Immediate Recall	Verbal Paired Associates	N	NA
	Visual Immediate Recall	Visual Reproduction	N	NA
	Visual Immediate Recall	Digit Symbol Test Immediate	N	NA
	Verbal Delayed Recall	Rey Auditory Verbal Learning Test (RAVLT) Delayed Recall	N	NA
	Verbal Delayed Recall	Rey Auditory Verbal Learning Test (RAVLT) Delayed Recognition	N	NA
	Verbal Delayed Recall	Verbal Paired Associates-Delay	N	NA
	Visual Delayed Recall	Visual Reproduction Delay	N	NA
	Visual Delayed Recall	Digit Symbol Test Delay	N	NA
	Executive Function	Trailmaking Task B	N	NA
Oken et al. (2006)	Cognitive Speed	Reaction time (Simple, Choice)	N	NA
	Cognitive Inhibition	Stroop Task	N	NA
	Visual Attention	Covert Orienting (Invalid - Valid)	N	NA
	Visual Attention	Modified Useful Field of View (UFOV)	N	NA
	Verbal Working Memory	Letter-Number Sequencing	N	NA
	Verbal Delayed Recall	Word List Delayed Recall	N	NA
	Executive Function	Set Shifting	N	NA
<b>Process-Based Cognitive Training</b>				
Ball et al. (2002)	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	Y	Y



	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLT), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)	N	N
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	N	N
Barnes et al. (2013)	Cognitive Speed	Trailmaking Task A	N	NA
	Cognitive Speed	Useful Field of View (UFOV) 2: Processing Speed	N	NA
	Visual Attention	Useful Field of View (UFOV) 3: Divided Attention	N	NA
	Visual Attention	Useful Field of View (UFOV) 4: Selective Attention	N	NA
	Cognitive Inhibition	Eriksen Flanker Task: Congruent and Incongruent Reaction Times	N	NA
	Verbal Immediate Recall	Rey Auditory Verbal Learning Test (RAVLT): Words Learned and Recalled	N	NA
	Executive Function	Verbal Fluency: Letter and Category	N	NA
	Executive Function	Trailmaking Task B	N	NA
Belchior et al. (2013)	Cognitive Speed	Useful Field of View (UFOV) 2: Processing Speed	N	NA
	Visual Attention	Useful Field of View (UFOV) 3: Divided Attention	N	NA
	Visual Attention	Useful Field of View (UFOV) 4: Selective Attention	Y	NA
Borella et al. (2010)	Cognitive Speed	Pattern Comparison Test (RT)	Y	Y
	Cognitive Inhibition	Stroop Color Interference Index	Y	N
	Verbal Immediate Recall	Digit Span Forward	Y	N

	Verbal Working Memory	Categorization Working Memory Span (CWMS)	Y	Y
	Visual Working Memory	Digit Span Backward	Y	N
	Visual Working Memory	Dot Matrix Test	Y	N
	Executive Function	Cattell Culture Fair Test	Y	Y
Borella et al. (2013)	Cognitive Speed	Pattern Comparison Test (RT)	N	N
	Cognitive Inhibition	Stroop Color Interference Index	N	N
	Cognitive Inhibition	Stroop Color Incongruent Errors	Y	Y
	Verbal Immediate Recall	Digit Span Forward	Y	N
	Verbal Working Memory	Categorization Working Memory Span (CWMS)	Y	Y
	Visual Working Memory	Digit Span Backward	N	N
	Visual Working Memory	Dot Matrix Test	N	N
	Executive Function	Cattell Culture Fair Test	N	N
Carretti et al. (2013)	Verbal Immediate Recall	Listening Comprehension-True/False	Y	Y
	Visual Immediate Recall	Reading Comprehension of Expository Texts	N	N
	Verbal Working Memory	Categorization Working Memory Span (CWMS)	Y	Y
	Verbal Working Memory	Working Memory Updating	Y	Y
	Executive Function	Listening Comprehension: Map Drawing	Y	Y

	Executive Function	Cattell Culture Fair Test	N	N
Dahlin et al. (2008)	Visual Immediate Recall	Letter Memory		Y NA
	Visual Working Memory	1-Back (False Alarms, Correct)		Y NA
	Visual Working Memory	2-Back (False Alarms, Correct)		Y NA
	Visual Working Memory	3-Back (False Alarms, Correct)	N	NA
Gajewski & Falkenstein (2012)	Cognitive Speed	Mixing Costs in RT (MS)	N	NA
	Cognitive Speed	Local Costs in RT (MS)	N	NA
	Cognitive Speed	Mixing Costs in SD (MS)		Y NA
	Cognitive Speed	Local Costs in SD (MS)		Y NA
	Cognitive Speed	Mixing Costs in Errors (%)		Y NA
	Cognitive Speed	Local Costs in Errors (%)		Y NA
Goghari et al. (2017) (Working memory)	Cognitive Speed	Delis-Kaplan Executive Function Scale (DKEFS) Processing Speed Composite (Trailmaking Task 1-3, D-KEFS Color-Word Interference 1-2)	N	NA
	Cognitive Speed	Symbol Search	N	NA
	Cognitive Inhibition	Delis-Kaplan Executive Function Scale (DKEFS) Flexibility Composite (Color-Word Interference Tasks 3-4)	N	NA
	Cognitive Inhibition	Delis-Kaplan Executive Function Scale (DKEFS) Design Fluency 3 (D-KEFS)		Y NA
	Verbal Working Memory	Digit Span	N	NA
	Visual Working Memory	Automated Operation Span	N	NA

	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Tower Test	N	NA
	Executive Function	Raven's Matrices	N	NA
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Letter Fluency	N	NA
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Design Fluency 1-2	N	NA
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Trailmaking Task 4	N	NA
Goghari et al. (2017) (Logic + planning)	Cognitive Speed	Delis-Kaplan Executive Function Scale (DKEFS) Processing Speed Composite (Trailmaking Task 1-3, D-KEFS Color-Word Interference 1-2)	N	NA
	Cognitive Speed	Symbol Search	N	NA
	Cognitive Inhibition	Delis-Kaplan Executive Function Scale (DKEFS) Flexibility Composite (Color-Word Interference Tasks 3-4)	N	NA
	Cognitive Inhibition	Delis-Kaplan Executive Function Scale (DKEFS) Design Fluency 3	Y	NA
	Verbal Working Memory	Digit Span	N	NA
	Visual Working Memory	Automated Operation Span	N	NA
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Tower Test	N	NA
	Executive Function	Raven's Matrices	N	NA
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Letter Fluency	N	NA
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Design Fluency 1-2	N	NA

	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Trailmaking Task 4	N	NA
Lampit et al. (2014)	Cognitive Speed	Information Processing Speed Composite (Mindstreams Battery)	Y	N
	Verbal Delayed Recall	Memory Composite (Mindstreams Battery)	Y	N
	Executive Function	Executive Function Composite (Stroop and CANTAB Stockings of Cambridge)	N	N
	Executive Function	Language Composite (COWAT, Boston Naming Test)	N	N
	Executive Function	Extended Global Cognition Composite (Controlled Oral Word Association Task, Boston Naming Test, Recognition Memory Test, WAIS-IV Matrix Reasoning)	Y	Y
Lee et al. (2012)	Dementia Status	MMSE-K	N	NA
	Visual Perception	Motor-Free Visual Perceptual Test	N	NA
Legault et al. (2011)	Cognitive Inhibition	Eriksen Flanker Task	N	NA
	Verbal Immediate Recall	Logical Memory I	N	NA
	Verbal Immediate Recall	Hopkins Verbal Learning Test (HVLT) Immediate Recall	N	NA
	Visual Working Memory	1-back	N	NA
	Visual Working Memory	2-back	N	NA
	Verbal Delayed Recall	Logical Memory II	N	NA
	Verbal Delayed Recall	Hopkins Verbal Learning Test (HVLT) Delayed Recall	N	NA
	Executive Function	Self-Ordered Pointing Task	N	NA

	Executive Function	Task Switching	N	NA
	Executive Function	Trailmaking Task B - Trailmaking Task A	N	NA
Millán-Calenti et al (2015)	Dementia Status	Mini-Mental Status Examination (MMSE)	Y	NA
Mozolic et al. (2011)	Verbal Attention	Selective Auditory Attention	Y	NA
	Visual Attention	Cross-modal distraction (RT, accuracy)	Y	NA
	Visual Attention	Within-Modality distraction (RT, accuracy)	N	NA
	Visual Attention	Symbol Digit Modalities Test (SDMT)	Y	NA
	Visual Attention	Selective Visual Attention	Y	NA
	Multimodal Attention	Divided Attention	N	NA
	Cognitive Inhibition	Stroop Color-Word Test (% Interference)	N	NA
	Verbal Immediate Recall	Hopkins Verbal Learning Test (HVLT) Immediate Recall	N	NA
	Visual Working Memory	1-back	Y	NA
	Visual Working Memory	2-back	N	NA
	Verbal Delayed Recall	Hopkins Verbal Learning Test (HVLT) Delayed Recall	N	NA
	Executive Function	Walk & Talk Paradigm	Y	NA
	Executive Function	Trailmaking Task B (% Interference)	N	NA
Nouchi et al. (2012)	Cognitive Speed	Symbol Search	Y	NA
	Cognitive Speed	Digit Symbol Coding	Y	NA
	Visual Attention	Digit Cancellation Task	N	NA

	Verbal Immediate Recall	Digit Symbol Forward	N	NA
	Verbal Working Memory	Digit Symbol Backward	N	NA
	Executive Function	Trailmaking Task B		Y NA
	Executive Function	Frontal Assessment Battery at Bedside (FAB)		Y NA
	Dementia Status	Mini-Mental Status Examination (MMSE)	N	NA
O'Brien et al. (2013)	Visual Attention	Visual Search	N	NA
Rebok et al. (2014)	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	NA	Y
	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLTL), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)	NA	N
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	NA	N
Shatil (2013)	Cognitive Speed	Speed of Visual-Spatial Information Processing (composite of reaction time [RT], spatial perception, visual perception)		Y NA
	Cognitive Speed	Hand-Eye Coordination		Y NA
	Cognitive Speed	Naming		Y NA
	Visual Attention	Shifting	N	NA
	Visual Attention	Divided Attention	N	NA
	Visual Attention	Avoiding Distractors	N	NA
	Visual Attention	Visual Scanning		Y NA
	Cognitive Inhibition	Inhibition (CogniFit Neuropsychological Battery)	N	NA

	Verbal Working Memory	Auditory (Non-Linguistic) Working Memory	N	NA
	Visual Delayed Recall	Global Visual Memory (Composite of Visual Working and General Memory)	Y	NA
	Executive Function	Planning (Maze Test)	N	NA
	Executive Function	Time Estimation	N	NA
Smith et al. (2009)	Verbal Immediate Recall	Rey Auditory Verbal Learning Test (RAVLT) Total Score	Y	NA
	Verbal Immediate Recall	Rivermead Behavioral Memory Test (RBMT): Immediate Recall	N	NA
	Verbal Working Memory	Digit Span Backward	Y	NA
	Verbal Working Memory	Letter-Number Sequencing	Y	NA
	Verbal Delayed Recall	Rey Auditory Verbal Learning Test (RAVLT) Delayed Recall	Y	NA
	Verbal Delayed Recall	Rivermead Behavioral Memory Test (RBMT) Delayed Recall	N	NA
	Executive Function	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Auditory Memory and Attention Subtest	Y	NA
	Subjective Cognition	Cognitive Self-Report Questionnaire (CSRQ-25)	Y	NA
Stepankova et al. (10 Sessions)	Verbal Working Memory	Working Memory Composite (Digit Span Forward & Backward, Letter-Number Sequencing)	Y	NA
	Visual Working Memory	n-back	Y	NA
	Executive Function	Visuospatial Skills Composite (Block Design, Matrix Reasoning)	Y	NA



Stepankova et al. (20 Sessions)	Verbal Working Memory	Working Memory Composite (Digit Span Forward & Backward, Letter-Number Sequencing)	Y	NA
	Visual Working Memory	n-back	Y	NA
	Executive Function	Visuospatial Skills Composite (Block Design, Matrix Reasoning)	Y	NA
Stigsdotter et al. (1989)	Verbal Immediate Recall	Buschke Selective Reminding Task Short-Term Retrieval	N	N
	Visual Immediate Recall	Benton Visual Retention	N	N
	Verbal Working Memory	Digit Span Test	N	N
	Verbal Delayed Recall	Buschke Selective Reminding Task List Learning	N	N
	Verbal Delayed Recall	Buschke Selective Reminding Task Total Recall	N	N
Stigsdotter-Neely et al. (1993)	Verbal Immediate Recall	Recall of Concrete Words	N	N
	Verbal Immediate Recall	Recall of Abstract Words	N	N
	Verbal Immediate Recall	Digit Span Forward	N	N
	Visual Immediate Recall	Benton Visual Retention	N	N
Willis et al. (2006)	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	NA	Y
	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLT), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)	NA	N
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	NA	N

Wolinsky et al. (2013)	Cognitive Speed	Trailmaking Task A	Y	NA
	Visual Attention	Digit Vigilance Task	N	NA
	Visual Attention	Symbol Digit Modalities Test (SDMT)	Y	NA
	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	Y	NA
	Cognitive Inhibition	Stroop Color Word Task	N	NA
	Executive Function	Trailmaking Task B	Y	NA
	Executive Function	Controlled Oral Word Association Task (COWAT)	N	NA
Zelinski et al. (2011)	Verbal Immediate Recall	Rey Auditory Verbal Learning Test (RAVLT) Total Score	NA	Y
	Verbal Immediate Recall	Rivermead Behavioral Memory Test (RBMT): Immediate Recall	NA	N
	Verbal Working Memory	Digit Span Backward	NA	N
	Verbal Working Memory	Letter-Number Sequencing	NA	Y
	Verbal Delayed Recall	Rey Auditory Verbal Learning Test (RAVLT) Delayed Recall	NA	N
	Verbal Delayed Recall	Rivermead Behavioral Memory Test (RBMT) Delayed Recall	NA	N
	Executive Function	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Auditory Memory and Attention Subtest	NA	N
	Subjective Cognition	Cognitive Self-Report Questionnaire (CSRQ-25)	NA	N
Subjective Cognition	Cognitive Self-Report Questionnaire (CSRQ-25): Cognitive Subscale	NA	Y	

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**Strategy-Based Cognitive Training**


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Ball et al. (2002) Memory	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	N	N
	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLTL), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)	Y	Y
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	N	N
Ball et al. (2002) Reasoning	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	N	N
	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLTL), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)	N	N
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	Y	Y
Best et al. (1992)	Verbal Delayed Recall	Phone Number Recall	Y	Y
	Verbal Delayed Recall	Names and Faces Recall	N	N
	Verbal Delayed Recall	Paragraph Recall (Wechsler Memory Scale)	Y	Y
	Verbal Delayed Recall	Grocery List Recall	Y	Y
	Verbal Delayed Recall	Unrelated List Recall	Y	Y
	Subjective Cognition	Subjective Memory Complaints	Y	Y
	Subjective Cognition	Memory Decline Index	N	N
Cao et al. (2016)	Cognitive Speed	Trailmaking Task A	N	NA
	Cognitive Inhibition	Stroop Color-Word Task	N	NA

	Verbal Immediate Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Immediate Memory	N	NA
	Visual Immediate Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Visuospatial and Constructional Subscale	N	NA
	Verbal Delayed Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Delayed Memory	Y	NA
	Executive Function	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Language	Y	NA
	Executive Function	Visual Reasoning Test	N	NA
	Executive Function	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Attention	N	NA
	Executive Function	Trailmaking Task B	N	NA
Cavallini et al. (2015)	Verbal Immediate Recall	Object List Learning	Y	Y
	Verbal Immediate Recall	Figure-Word Pairing	Y	Y
	Verbal Immediate Recall	Grocery List Learning	Y	Y
	Verbal Immediate Recall	Associative Learning	Y	Y
	Verbal Immediate Recall	Text Learning	N	N
	Verbal Immediate Recall	Face-Name Learning	Y	Y
	Verbal Immediate Recall	Word List Learning	Y	Y

Cheng et al. (2012)	Cognitive Speed	Trailmaking Task A (Completion Time, Error)	N	N
	Cognitive Inhibition	Stroop Color Word Test (Interference, Errors)	N	N
	Verbal Immediate Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Immediate Memory	N	N
	Visual Immediate Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Visuospatial and Constructional Subscale	Y	Y
	Verbal Delayed Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Delayed Memory	Y	N
	Executive Function	Trailmaking Task B	N	N
	Executive Function	Visual Reasoning Test	Y	Y
	Executive Function	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Attention	N	N
	Executive Function	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Language	Y	N
	Dementia Status	Mini-Mental Status Examination (MMSE)	N	N
Craik et al. (2007)	Verbal Immediate Recall	Brown-Peterson Test	N	N
	Verbal Immediate Recall	Hopkins Verbal Learning Test-Revised (HVLTR)	N	N
	Verbal Immediate Recall	Logical Stories Test	Y	N
	Verbal Working Memory	Alpha Span Test	N	N

Dawson et al. (2014)	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) First Move Tower Test	N	N	
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Tower Test Achievement Score	N	N	
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Word Fluency Score	N	N	
	Executive Function	Delis-Kaplan Executive Function Scale (DKEFS) Trail Making	N	N	
McDougall, Jr. et al. (2010)	Visual Immediate Recall	Brief Visuospatial Memory Test-Revised	N	N	
	Verbal Delayed Recall	Hopkins Verbal Learning Test-Revised (HVLT-R) Delayed Recall	N	N	
	Verbal Delayed Recall	Rivermead Behavioral Memory Test (RBMT) Delayed Recall	N	N	
	Dementia Status	Mini-Mental Status Examination (MMSE)		Y	N
	Subjective Cognition	Memory Self Efficacy Questionnaire		Y	N
	Subjective Cognition	Metamemory in Adulthood Questionnaire	N		N
	Subjective Cognition	Metamemory in Adulthood Questionnaire- External Strategies Subscale	N		N
	Subjective Cognition	Metamemory in Adulthood Questionnaire- Internal Strategies Subscale	N		N
Miller et al. (2013)	Multimodal Immediate Recall	Composite of Buschke-Fuld, Delayed Rey-Osterrieth, and Verbal Pairs	N		N
	Multimodal Delayed Recall	Composite of Delayed Buschke-Fuld, Delayed Rey-Osterrieth, and Verbal Pairs		Y	Y

	Executive Function	Composite of FAS, Animal Naming, and Boston Naming Task	N	N
Nouchi et al. (2016)	Cognitive Speed	Symbol Search	Y	NA
	Cognitive Speed	Digit Symbol Coding	Y	NA
	Visual Attention	Digit Cancellation Task	Y	NA
	Cognitive Inhibition	Stroop Color-Word Task	Y	NA
	Verbal Immediate Recall	Digit Span Forward	N	NA
	Verbal Immediate Recall	Logical Memory	Y	NA
	Visual Immediate Recall	First and Second Names	N	NA
	Verbal Working Memory	Digit Span Backward	N	NA
	Executive Function	Verbal Fluency	N	NA
	Executive Function	Japanese Reading Test	N	NA
Rebok et al. (2014) Memory	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	NA	N
	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLTL), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)	NA	N
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	NA	N
Rebok et al. (2014) Reasoning	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	NA	N
	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLTL), Auditory	NA	N

		Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)		
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	NA	Y
Requena et al. (2016)	Verbal Immediate Recall	Rivermead Behavioral Memory Test (RBMT): Immediate Recall	Y	NA
	Dementia Status	Mini-Mental Cognitive Examination (Spanish adaptation of MMSE)	Y	NA
Willis et al. (2006) Memory	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	NA	N
	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLTL), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)	NA	Y
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	NA	N
Willis et al. (2006) Reasoning	Visual Attention	Useful Field of View (UFOV) Subtests 2-4 (composite)	NA	N
	Verbal Immediate Recall	Composite of Hopkins Verbal Learning Test (HVLTL), Auditory Verbal Learning Test (AVLT), and Rivermead Behavioral Memory Test (RBMT)	NA	N
	Executive Function	Composite Score of Word Series, Letter Series, Letter Sets	NA	Y

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**Action Video Game Interventions**


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Belchior et al. (2013)	Cognitive Speed	Useful Field of View (UFOV) 2: Processing Speed	N	NA
	Visual Attention	Useful Field of View (UFOV) 3: Divided Attention	N	NA
	Visual Attention	Useful Field of View (UFOV) 4: Selective Attention	Y (no-contact only)	NA



Goldstein et al. (1997)	Cognitive Speed	Sternberg Test Reaction Time	Y	NA
	Cognitive Inhibition	Stroop Color-Word Test	N	NA
Torres (2010)	Dementia Status	Alzheimer Disease Assessment Scale (ADAS-Cog)	Y	NA

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**Aerobic Training**


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Albinet et al. (2010)	Executive Function	Wisconsin Card-Sorting Task	Y	NA
Bakken et al. (2001)	(Psycho)motor Function	Finger Tracing Accuracy	Y	NA
Barnes et al. (2013)	Cognitive Speed	Trailmaking Task A	N	NA
	Cognitive Speed	Useful Field of View (UFOV) 2: Processing Speed	N	NA
	Visual Attention	Useful Field of View (UFOV) 3: Divided Attention	N	NA
	Visual Attention	Useful Field of View (UFOV) 4: Selective Attention	N	NA
	Cognitive Inhibition	Eriksen Flanker Task: Congruent and Incongruent Reaction Times	N	NA
	Verbal Immediate Recall	Rey Auditory Verbal Learning Test (RAVLT): Words Learned and Recalled	N	NA
	Executive Function	Verbal Fluency: Letter and Category	N	NA
	Executive Function	Trailmaking Task B	N	NA
Kimura & Hozumi (2012)	Cognitive Speed	Task-Switching (Switch Cost)	Y	NA
	Cognitive Speed	Task-Switching (Correct)	N	NA
Maclean et al. (2014)	Verbal Working Memory	Serial 7s	N	NA
Maki et al. (2012)	Cognitive Speed	Trailmaking Task A	N	NA

	Visual Attention	Yamaguchi-Kanji Symbol Substitution Test	N	NA
	Visual Attention	Dual-Task Test	N	NA
	Verbal Working Memory	Cued Delayed Recall Test	N	NA
	Executive Function	Trailmaking Task B	N	NA
	Executive Function	Abstract Reasoning	N	NA
	Executive Function	Categorical Word Fluency	Y	NA
	Dementia Status	Clock Drawing	N	NA
Moul et al. (1995)	Verbal Immediate Recall	Ross Information Processing Assessment Memory (RIPA) Immediate Recall	N	NA
	Verbal Delayed Recall	Ross Information Processing Assessment Memory (RIPA) Delayed Recall	N	NA
	Executive Function	Total Ross Information Processing Speed (RIPA) Score	Y	NA
	Executive Function	Ross Information Processing Assessment (RIPA) Organization	Y	NA
	Executive Function	Ross Information Processing Assessment (RIPA) Problem Solving and Abstract Reasoning Subtest	Y	NA
	Dementia Status	Ross Information Processing Assessment (RIPA) Temporal Orientation	N	NA
	Verbal Perception	Ross Information Processing Assessment (RIPA) Auditory Processing	Y	NA
Muscari et al. (2010)	Dementia Status	Mini-Mental Status Examination (MMSE)	Y	NA
Oken et al. (2006)	Cognitive Speed	Reaction time (Simple, Choice)	N	NA

	Cognitive Inhibition	Stroop Task	N	NA
	Visual Attention	Covert Orienting (Invalid - Valid)	N	NA
	Visual Attention	Modified Useful Field of View (UFOV)	N	NA
	Verbal Working Memory	Letter-Number Sequencing	N	NA
	Verbal Delayed Recall	Word List Delayed Recall	N	NA
	Executive Function	Set Shifting	N	NA
Panton et al. (1990)	(Psycho)motor Function	Total Reaction Time	N	NA
	(Psycho)motor Function	Speed of Movement	N	NA
	(Psycho)motor Function	Premotor Time	N	NA
	(Psycho)motor Function	Motor Time	N	NA
Shatil (2013)	Cognitive Speed	Speed of Visual-Spatial Information Processing (composite of reaction time [RT], spatial perception, visual perception)	N	NA
	Cognitive Speed	Hand-Eye Coordination	N	NA
	Cognitive Speed	Naming	N	NA
	Visual Attention	Shifting	N	NA
	Visual Attention	Divided Attention	N	NA
	Visual Attention	Avoiding Distractors	N	NA
	Visual Attention	Visual Scanning	N	NA
	Cognitive Inhibition	Inhibition (CogniFit Neuropsychological Battery)	N	NA
	Verbal Working Memory	Auditory (Non-Linguistic) Working Memory	N	NA

	Visual Delayed Recall	Global Visual Memory (Composite of Visual Working and General Memory)	N	NA
	Executive Function	Planning (Maze Test)	N	NA
	Executive Function	Time Estimation	N	NA
Smiley-Oyen et al. (2008)	Cognitive Speed	Simple and Complex Reaction Time	N	NA
	Cognitive Inhibition	Stroop Color-Word Conflict	N	NA
	Cognitive Inhibition	Errors on Stroop, Go/NoGo Tasks	N	NA
	Executive Function	Wisconsin Card-Sorting Task	N	NA
van Uffelen et al. (2008)	Visual Attention	Digit Symbol Substitution	N	NA
	Cognitive Inhibition	Stroop Color Word Task Abridged Tasks 1-3	N	NA
	Verbal Immediate Recall	AVLT 1-6	N	NA
	Executive Function	Verbal Fluency	N	NA
<b>Strength/Resistance Training</b>				
Cassilhas et al. (2007)	Cognitive Speed	Toulouse-Pieron Errors	Y (80% max only)	NA
	(Psycho)motor Speed	Rey-O Figure Copy	N	NA
	Visual Attention	Toulouse-Pieron Cancellation Number	N	NA
	Verbal Immediate Recall	Digit Span Forward	Y (both groups)	NA

	Visual Immediate Recall	Corsi Block-Tapping Forward	N	NA
	Visual Immediate Recall	Rey-O Figure Immediate Recall	Y (both groups)	NA
	Verbal Working Memory	Digit Span Backward	N	NA
	Visual Working Memory	Corsi Block-Tapping Backward	Y (both groups)	NA
	Visual Working Memory	Corsi Block-Tapping Similarities	Y (both groups)	NA
Kimura et al. (2010)	Cognitive Speed	Task-Switching Test Reaction Time (Switch, Repeat Trials)	N	NA
	Cognitive Speed	Task-Switching Test Correct Response (Switch, Repeat Trials)	N	NA
Liu-Ambrose et al. (2008)	Cognitive Inhibition	Stroop Color-Word Test	Y	NA
	Verbal Working Memory	Wechsler Memory Scale-III (WMS-III) Digits Backward	N	NA
	Executive Function	Trailmaking Task B	N	NA
Liu-Ambrose et al. (2010)	Cognitive Inhibition	Stroop Color-Word Test	Y (both groups)	NA
	Verbal Working Memory	Digit Span Test (Forward - Backward)	N	NA
	Executive Function	Trailmaking Task B (Controlling for Task A)	N	NA
Liu-Ambrose et al. (2012)	Cognitive Inhibition	Modified Flanker Task Interference Score	Y (both groups)	NA
	Cognitive Inhibition	Flanker Task Reaction Time (Incongruent, Congruent Trials)	N	NA
	Cognitive Inhibition	Changes in Flanker Incongruent - Congruent Reaction Time	N	NA

Moul et al. (1995)	Verbal Immediate Recall	Ross Information Processing Assessment Memory (RIPA) Immediate Recall	N	NA
	Verbal Delayed Recall	Ross Information Processing Assessment (RIPA) Recent Memory	N	NA
	Executive Function	Total Ross Information Processing Speed (RIPA) Score	N	NA
	Executive Function	Ross Information Processing Assessment (RIPA) Organization	N	NA
	Executive Function	Ross Information Processing Assessment (RIPA) Problem Solving and Abstract Reasoning Subtest	N	NA
	Dementia Status	Ross Information Processing Assessment (RIPA) Temporal Orientation	N	NA
	Verbal Perception	Ross Information Processing Assessment (RIPA) Auditory Processing	N	NA
Panton et al. (1990)	(Psycho)motor Function	Total Reaction Time	N	NA
	(Psycho)motor Function	Speed of Movement	N	NA
	(Psycho)motor Function	Premotor Time	N	NA
	(Psycho)motor Function	Motor Time	N	NA
Perrig-Chiello et al. (1998)	Visual Attention	Digit Symbol Substitution	N	NA
	Verbal Immediate Recall	Immediate Recognition	N	NA
	Verbal Immediate Recall	Immediate Free Recall	N	NA
	Verbal Delayed Recall	Delayed Recognition	N	NA

	Verbal Delayed Recall	Delayed Free Recall	N	NA
<b>Aerobic/Resistance Combination Training</b>				
Gajewski & Falkenstein (2012)	Cognitive Speed	Mixing Costs in RT (MS)	N	NA
	Cognitive Speed	Local Costs in RT (MS)	N	NA
	Cognitive Speed	Mixing Costs in SD (MS)	N	NA
	Cognitive Speed	Local Costs in SD (MS)	N	NA
	Cognitive Speed	Mixing Costs in Errors (%)	N	NA
	Cognitive Speed	Local Costs in Errors (%)	N	NA
Legault et al. (2011)	Cognitive Inhibition	Eriksen Flanker Task	N	NA
	Verbal Immediate Recall	Logical Memory I	N	NA
	Verbal Immediate Recall	Hopkins Verbal Learning Test (HVLT) Immediate Recall	N	NA
	Visual Working Memory	1-back	N	NA
	Visual Working Memory	2-back	N	NA
	Verbal Delayed Recall	Logical Memory II	N	NA
	Verbal Delayed Recall	Hopkins Verbal Learning Test (HVLT) Delayed Recall	N	NA
	Executive Function	Self-Ordered Pointing Task	N	NA
	Executive Function	Task Switching	N	NA
	Executive Function	Trailmaking Task B - Trailmaking Task A	N	NA
Klusmann et al. (2010)	Cognitive Inhibition	Stroop Task	N	NA

	Verbal Immediate Recall	Rivermead Behavioral Memory Test (RBMT): Immediate Recall	Y	NA
	Verbal Immediate Recall	Free and Cued Selective Reminding Task Short Delay	N	NA
	Verbal Delayed Recall	Rivermead Behavioral Memory Test (RBMT) Delayed Recall	Y	NA
	Verbal Delayed Recall	Free and Cued Selective Reminding Task Long Delay	Y	NA
	Executive Function	Semantic Verbal Fluency	N	NA
	Executive Function	Trailmaking Task B controlling for Task A	Y	NA
Klusmann et al. (2011)	Subjective Cognition	Self-Reported Memory	N	NA
	Subjective Cognition	Self-Reported Concentration	N	NA
Okumiya et al. (1996)	Visual Attention	Visuospatial Cognitive Performance Test	N	NA
	Dementia Status	Mini-Mental Status Examination (MMSE)	N	NA
	Dementia Status	Hasegawa Dementia Scale-Revised	N	NA
Williamson et al. (2009)	Visual Attention	Digit Symbol Substitution	N	NA
	Verbal Immediate Recall	Rey Auditory Verbal Learning Test (RAVLT) Immediate Recall	N	NA
	Executive Function	Modified Stroop Task	N	NA
	Dementia Status	Modified Mini-Mental Status Examination (3MSE)	N	NA

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**Combination (Nonfactorial) Interventions**


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Chambon et al. (2014)	Visual Immediate Recall	Doors and People Test: Visual Recognition Subtest	Y	N
	Visual Immediate Recall	Letter-Location Association Recall Task	N	N



	Verbal Delayed Recall	Free Reminding Test (RL/RI-16)	Y	Y
	Verbal Delayed Recall	BEM-144 Memory Battery 12-Word Recall	Y	Y
	Subjective Cognition	Memory Functioning Questionnaire: Frequency of Forgetting Subscale	Y	NA
Cheng et al. (2012)	Cognitive Inhibition	Stroop Color Word Test (Interference, Errors)	N	N
	Verbal Immediate Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Immediate Memory	Y	N
	Visual Immediate Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Visuospatial and Constructional Subscale	N	N
	Verbal Delayed Recall	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Delayed Memory	Y	N
	Executive Function	Trailmaking Task B	N	N
	Executive Function	Visual Reasoning Test	Y	Y
	Executive Function	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Attention	N	N
	Executive Function	Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) Language	N	N
	Dementia Status	Mini-Mental Status Examination (MMSE)	N	N
Falbo et al. (2016)	Cognitive Inhibition	Turning Point Index	N	NA
	Cognitive Inhibition	Adjacency	N	NA

	Cognitive Inhibition	Runs	N	NA
	Verbal Working Memory	Redundancy	N	NA
	Verbal Working Memory	Coupon	N	NA
	Verbal Working Memory	Mean Repetition Gap	N	NA
Hiyamizu et al. (2011)	Cognitive Speed	Trailmaking Task A	N	NA
	Executive Function	Trailmaking Task B	N	NA
	Executive Function	Rate of Stroop Task		Y NA
Kitazawa et al. (2015)	Dementia Status	Touch-M		Y NA
	Dementia Status	Touch Panel-type Dementia Assessment Scale (TDAS)	N	NA
Lampit et al. (2015)	Executive Function	Composite of Processing Speed, Memory, and Executive Function		Y NA
Li et al. (2010)	Cognitive Speed	Reaction Time		Y NA
Luo et al. (2016)	Dementia Status	Mini-Mental Status Examination (MMSE)	N	NA
Maillot et al. (2012)	Cognitive Speed	Simple Reaction Time: Decision and Movement Times		Y NA
	Cognitive Speed	Choice Reaction Time: Decision and Movement Times		Y NA
	(Psycho)motor Function	Tapping		Y NA
	Visual Attention	Digit Symbol Substitution		Y NA
	Cognitive Inhibition	Stroop Task		Y NA
	Visual Immediate Recall	Spatial Span	N	NA

	Verbal Working Memory	Mental Rotation	N	NA
	Visual Working Memory	Backward Spatial Span	N	NA
	Executive Function	Matrix Reasoning		Y NA
	Executive Function	Letter Sets		Y NA
	Executive Function	Trailmaking Task B Controlling for Task A		Y NA
	Executive Function	Directions Heading		Y NA
	Verbal Perception	Cancellation		Y NA
	Verbal Perception	Number Comparison		Y NA
Sato et al. (2015)	(Psycho)motor Function	Movement (From 5-Cog Test)	N	NA
	(Psycho)motor Function	Four Choice Stepping Reaction Time	N	NA
	Visual Attention	Attention (From 5-Cog Test)		Y NA
	Verbal Delayed Recall	Memory and Learning (From 5-Cog Test)		Y NA
	Executive Function	Language Fluency (From 5-Cog Test)	N	NA
	Executive Function	Thinking (From 5-Cog Test)	N	NA
	Dementia Status	Visuospatial Cognition (From 5-Cog Test)	N	NA
	Dementia Status	Hasegawa Dementia Scale-Revised	N	NA
Schättin et al. (2016)	Multimodal Attention	Divided Attention (Auditory and Visual)	N	NA
	Cognitive Inhibition	Go/NoGo Task	N	NA

	Visual Working Memory	N-back	N	NA
	Executive Function	Set Shifting	N	NA
Stigsdotter et al. (1989)	Verbal Immediate Recall	Buschke Selective Reminding Task Short-Term Retrieval	Y	Y
	Visual Immediate Recall	Benton Visual Retention	N	N
	Verbal Working Memory	Digit Span Test	N	N
	Verbal Delayed Recall	Buschke Selective Reminding Task List Learning	Y	Y
	Verbal Delayed Recall	Buschke Selective Reminding Task Total Recall	Y	Y
Stigsdotter-Neely et al. (1993)	Verbal Immediate Recall	Recall of Concrete Words	Y	Y
	Verbal Immediate Recall	Recall of Abstract Words	N	N
	Verbal Immediate Recall	Digit Span Forward	N	N
	Visual Immediate Recall	Benton Visual Retention	N	N
Uemura et al. (2012)	Cognitive Speed	Reaction Time (Single Task)	N	NA
	Cognitive Speed	Reaction Time (Dual Task)	Y	NA
Westlake & Colham (2007)	Cognitive Speed	Reponses Accuracy	N	NA
	Cognitive Speed	Speed of Performance	N	NA

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**Combination (Factorial) Interventions**


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Barnes et al. (2013)	Cognitive Speed	Trailmaking Task A	N	NA
	Cognitive Speed	Useful Field of View (UFOV) 2: Processing Speed	N	NA
	Visual Attention	Useful Field of View (UFOV) 3: Divided Attention	Y	NA

	Visual Attention	Useful Field of View (UFOV) 4: Selective Attention	Y	NA
	Cognitive Inhibition	Eriksen Flanker Task: Congruent and Incongruent Reaction Times	N	NA
	Verbal Immediate Recall	Rey Auditory Verbal Learning Test (RAVLT): Words Learned and Recalled	N	NA
	Executive Function	Verbal Fluency: Letter and Category	N	NA
	Executive Function	Trailmaking Task B	N	NA
Legault et al. (2011)	Cognitive Inhibition	Eriksen Flanker Task	N	NA
	Verbal Immediate Recall	Logical Memory I	N	NA
	Verbal Immediate Recall	Hopkins Verbal Learning Test (HVL) Immediate Recall	N	NA
	Visual Working Memory	1-back	N	NA
	Visual Working Memory	2-back	N	NA
	Verbal Delayed Recall	Logical Memory II	N	NA
	Verbal Delayed Recall	Hopkins Verbal Learning Test (HVL) Delayed Recall	N	NA
	Executive Function	Self-Ordered Pointing Task	N	NA
	Executive Function	Task Switching	N	NA
	Executive Function	Trailmaking Task B - Trailmaking Task A	N	NA
Shatil (2013)	Cognitive Speed	Speed of Visual-Spatial Information Processing (composite of reaction time [RT], spatial perception, visual perception)	Y	NA

Cognitive Speed	Hand-Eye Coordination		Y	NA
Cognitive Speed	Naming		Y	NA
Visual Attention	Shifting	N		NA
Visual Attention	Divided Attention	N		NA
Visual Attention	Avoiding Distractors	N		NA
Visual Attention	Visual Scanning		Y	NA
Cognitive Inhibition	Inhibition (CogniFit Neuropsychological Battery)	N		NA
Verbal Working Memory	Auditory (Non-Linguistic) Working Memory	N		NA
Visual Delayed Recall	Global Visual Memory (Composite of Visual Working and General Memory)		Y	NA
Executive Function	Planning (Maze Test)	N		NA
Executive Function	Time Estimation	N		NA

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Note. Imm. = Immediate; LT = Long-Term; Y = Yes; N = No; NA = Not applicable.