

A GAME A DAY KEEPS COGNITIVE DECLINE AWAY? A SYSTEMATIC REVIEW AND META-ANALYSIS OF COMMERCIALY-AVAILABLE BRAIN TRAINING PROGRAMS IN HEALTHY AND COGNITIVELY IMPAIRED OLDER ADULTS

Nguyen et al. (2022)

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Snapshot! This systematic review and meta-analysis by Nguyen et al. (2022) explored the usefulness of [commercially available cognitive training programs](#) and whether these cognitive training programs [enhance cognitive abilities and everyday functioning](#) in older adults with and without mild cognitive impairment. This systematic review also aimed to understand whether one commercial cognitive training program was 'most effective' at improving cognitive abilities.

WHO? People with Mild Cognitive Impairment

Mild Cognitive Impairment, called MCI for short, is a health condition involving problems with memory, language, thinking, or judgement. It is described as mild because interference with daily life is not as significant as in dementia. A person with Mild Cognitive Impairment may notice memory slips themselves, and their friends and family may notice memory changes as well. Mild Cognitive Impairment may increase a person's risk of developing dementia later in life.

Note! In this citizen briefing we will use the term '**cognitive abilities**' to refer to mental processes such as memory, attention, language and other thinking processes.

WHAT? Commercially Available Cognitive Training Programs

Cognitive training, also called brain training, retraining, or remediation, refers to a set of activities that **train your brain on cognitive abilities like memory, attention, or problem-solving**.

Commercial cognitive training programs are form of cognitive training programs that are available directly to the consumer.

Cognitive Training programs included in the review

- BrainGymmer,
- BrainHQ,
- CogMed,
- CogniFit,
- Dakim,
- Lumosity,
- MyBrainTrainer

HOW? Systematic Review

A **systematic review** involves carefully reviewing all studies that have been published to answer the research question.

A **meta-analysis** combines all the results across the selected studies, so we can see the overall impact of the treatment.

WHAT WAS FOUND?



For healthy older adult and Mild Cognitive Impairment Populations, commercial cognitive training was associated with **improved performance** on tasks that measured similar cognitive abilities to those trained (near-transfer effect).



For healthy older adults, commercial cognitive training was associated with **improvements on subjective measures (self-reported) cognitive abilities** that weren't directly trained (far-transfer effect). In people with Mild Cognitive Impairment, far-transfer effects to untrained cognitive abilities were not found.



It **remains unclear which commercial cognitive training program is 'most effective'** for healthy older adults and people with Mild Cognitive Impairment. Although only Brain HQ and CogniFit programs produced significant near near-transfer effects.

CONCLUSION

- **Commercial cognitive training programs may lead to improvements in trained cognitive abilities for older adults, and people with mild cognitive impairment.**
- More research is needed to understand the efficacy of specific cognitive training programs.
- More research is needed to better understand the transfer of commercial cognitive training to untrained cognitive abilities and in populations with mild cognitive impairment.



Want to learn more about cognitive training and other types of cognitive interventions? Click [here](#) to navigate to the CogTale health consumer learn page.