

Four Scientific Findings that point to the importance of Brain Fitness for the Aging Population

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1) Playing Games Is Good for the Aging Brain

In January, 2012 a study published in *Archives of Neurology* reported that people who exercise their brains consistently throughout their lives, by playing games, as well as engaging in continual new learning, live healthier and cognitively smarter lives as they age. The study, comprised of 65 healthy older individuals (average age of 76), 10 patients with Alzheimer's Disease (average age of 75) and 11 young controls (average age of 24.5), ran from October 2005 to February 2011. According to research scientist Susan Landau, based on PET scans used to identify beta-amyloid deposits (deposits found in the brains of people with Alzheimer's) the study showed a link between the quantity of deposits and the lifetime level of brain stimulation.

A recent review in the British online publication, *The Cochrane Library* came out February 15, 2012, stating "cognitive stimulation improves functioning in people with dementia." A total of 718 participants involved in 15 trials provided findings that cognitive stimulation has a beneficial effect on memory and thinking test scores in people with dementia. There was also evidence that the people with dementia reported improved quality of life, communicated and interacted better than prior to participating in the cognitive stimulation through word games, puzzles, reminiscence and practical activities such as baking and indoor gardening.

Dr. Robert Wilson and his team at Rush University Medical Center have published the outcomes of two studies (*Neurology*, April 4, 2012) reporting that late-life cognitive activity does improve cognitive health. One of Dr. Wilson's studies tracked almost 1100 people with the average age of 80 for close to 5 years. Final outcomes confirm that activities such as reading, socializing, playing bridge and board games stave off mental decline. Especially noted in this study was the activity changes in the temporal and hippocampus regions of the brain, where working memory functions. The study concluded that even in older adults, frequent mental stimulation by way of playing games, leads to better cognitive functioning.

References

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2) Benefits of Mental Stimulation over time

Dr. David Snowdon's study of Roman Catholic nuns provides a dramatic example of the benefits of mental stimulation. Snowdon's study discovered that about one third of the nuns found at autopsy to have the characteristic plaques and brain tangles associated with Alzheimer's disease had shown no symptoms of the disease while still alive and scored normally on mental and physical tests. Information about the nun's daily routines supports the hypothesis that the symptoms of Alzheimer's didn't manifest themselves in these nuns because they had remained more mentally active than their colleagues.¹

A report on 488 older adults in the Bronx Aging Study, a 10-year study of risk factors for cerebrovascular disease and dementia in adults aged 75 to 85, linked mentally stimulating leisure activities, such as playing cards, doing crossword puzzles, and doing artistic work with a delay in accelerated memory decline.²

Another study of more than 5,500 participants aged 65 and older reported that stimulating leisure activities were significantly associated with a reduced risk of dementia.³

The two most recent studies and the ongoing longitudinal Nun Study demonstrate that frequent brain exercise can reduce the likelihood of developing Alzheimer's disease. Comparatively, the 2007 study of 700 older adults found that cognitively inactive older adults were 2.6 times more likely to develop Alzheimer's than those who frequently participated in mentally stimulating activities.⁴

An active proponent of lifelong learning, especially to maintain brain health, Nancy Merz Nordstrom, MEd, director of the Elderhostel Institute Network says, "In older adult communities, the need to keep brains engaged all day, every day, in ordinary tasks should also be stressed", Nordstrom advises. She recommends a variety of easily accessible activities to keep older brains challenged and engaged, including the following:

- playing board games such as Scrabble, Risk, Pictionary, or Monopoly with friends to combine mental stimulation with social interaction;
- doing Sudoku, crossword, or jigsaw puzzles; and
- playing card games or chess.

References

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2. Hall CB, Lipton RB, Sliwinski M, et al. Cognitive activities delay onset of memory decline in persons who develop dementia. *Neurology*. 2009;73(5):356-361.
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3) Cognitive stimulation to improve cognitive functioning in people with dementia

People with dementia and their caregivers are often advised that 'mental exercise' may be helpful in slowing down the decline in memory and thinking experienced by many people with dementia. The January 2012 review examined the evidence for one form of mental exercise, described as cognitive stimulation. This involves a wide range of activities that aim to stimulate thinking and memory generally, including discussion of past and present events and topics of interest, word games, puzzles, music and practical activities such as baking or indoor gardening. Typically this is carried out by trained staff with a small group of four or five people with dementia for around 45 minutes at least twice a week. Family caregivers have also been trained to provide cognitive stimulation to their relative on a one-to-one basis.

The review included 15 trials with a total of 718 participants. The findings suggested that cognitive stimulation has a beneficial effect on the memory and thinking test scores of people with dementia. Although based on a smaller number of studies, there was evidence that the people with dementia who took part reported improved quality of life. They were reported to communicate and interact better than previously.

The trials included people in the mild to moderate stages of dementia and the intervention does not appear to be appropriate for people with severe dementia. More research is needed to find out how long the effects of cognitive stimulation last and for how long it is beneficial to continue the stimulation.

References

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4) Improving Quality of Life and Self Worth in the Person with Dementia

Engaging in stimulating activities and helping older patients keep even a small sense of purpose is crucial for improving their quality of life. Taking part in activities promotes self esteem, minimizes mental decline¹ and often encourages social interaction. Giving patients a sense of purpose and something to look forward to can improve mental health and empower them with a feeling of independence. This is important because futility and helplessness can be overwhelming for many individuals with dementia.. Strengthening cognitive abilities through stimulating activities can reestablish a sense of

normal function, and give them a sense of usefulness. The purposes of these activities is not so much about restoring functions that have been lost, but rather preventing further decline.² Research confirms the enabling effects of engaging in such activity.

A 2009 study by Gitlin et al. showed a reduction in agitation in patients and the need for medications to calm them when “purposeful activity” was incorporated into the community.³ Another study reported in the *Annals of Long Term Care* in the same year by Kolanowski et al. found that in addition to calming patients, focused, engaging activity decreased depression and improved sleep.⁴

References

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