

BrainBuilder®

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Visit the Philadelphia Senior Center just after lunch on a Wednesday and you'll see more than a dozen people doing just what brain experts recommend, though most of them don't know it.

There are three tables of pinochle players. A twosome play chess. Upstairs, four men play dominoes. In short, they're using their brains.

Ask them why and most respond like 67-year-old Roosevelt Cook, a retired dressmaker who plays pinochle almost every day. "It's like Einstein's theory of relativity," he says. "When you're doing something that you don't like, time drags. When you're doing something you like, the time goes fast." Well, most of his fellow players just say they're having fun, but, like him, they add that the games make them feel mentally sharper.

Only Lonnie Bowen, a retired social worker who is playing chess, is looking further ahead. "I do believe it does ward off Alzheimer's," he says. "It helps you keep your mind active."

Whether games by themselves directly stave off Alzheimer's is unclear, but a growing body of science is finding that people who engage in mentally stimulating activities are less likely to get the brain-robbing disease or, at least, seem to develop its symptoms later.

And studies in animals have shown that, contrary to the old scientific theory, new cells can generate in the brain, and learning stimulates their growth. The adage "use it or lose it" may apply to your brain as well as your body, brain experts say.

The research, coupled with the aging baby boomers' terror of dementia, has spawned considerable interest in memory - both improving it now and saving it later. A cottage "brain fitness" industry has blossomed, peddling books, games, and now, online exercises.

Bruce Friedman, who runs mybraintainer.com - online tests that focus on speed and memory - said he's negotiating with a national fitness company to offer his program to its members as part of a new healthy body, healthy mind program. (Mybraintainer.com already has a similar arrangement with Kaplan Test Prep.)

Advanced Brain Technologies in Utah, which produces Brain Builder software, is about to go online with a competing game. Its president, Alex Doman, is expecting 100,000 subscribers over the first two years. A Downingtown native, Doman is discussing using the program, aimed at improving "auditory and visual sequential processing," in schools and government facilities.

"I call it the memory fitness movement," said Gary Small, a geriatric psychiatrist who wrote *The Memory Bible* and directs UCLA's Center on Aging. He chairs the medical and scientific advisory board for the Memory Fitness Institute, scheduled to open its first Memory Fitness Center March 4 in Minneapolis. The center, he said, will offer state-of-the-art diagnosis of memory problems and strategies for "improving memory ability and brain fitness."

It's hard to imagine a downside to a world where people turn off Fear Factor to finish the New York Times crossword puzzle or exercise their brains online, but experts caution that the science of memory trails behind some of the conclusions people are drawing.

The area is "ripe for snake oil salesmen," said Samuel Gandy, director of Thomas Jefferson University's Farber Institute for Neurosciences.

Various studies have found a lower risk of Alzheimer's among people who frequently go to the theater; read; play games such as cards, checkers or crosswords; go to museums; even watch television. Dancing and playing a musical instrument had a protective effect in one study. Frequent social interaction also looks like a plus.

But Alzheimer's experts say it's too early to conclude that any type of mental activity is better than another.

It's also too early to know exactly what role mentally stimulating activities play in Alzheimer's. Scientists have known for years that people with more education are less likely to become demented, and educated people tend to like difficult games. Scientists don't know whether more education or game-playing prevents Alzheimer's, or whether some other aspect of the way educated people live or use their brains is more important.

One possibility is that dementia affects behaviors like game-playing long before recognized symptoms appear.

Another theory is that education and other mentally stimulating activities cause the brain to build a richer network of neural pathways, creating a cognitive reserve. They may develop the same physical pathology in the brain as others with Alzheimer's, but they can function longer because their brains have better backup systems.

Scientists believe Alzheimer's in most patients results from a combination of genetic and environmental factors. Some people were born with genes that virtually guarantee they will develop the disease. Everyone knows of brilliant professors or great writers who have gotten Alzheimer's. It's clear, then, that frequent and challenging use of the brain is no guarantee it will forever serve us well.

No one has yet proven that taking up chess in midlife after squandering your brainpower in your youth will help you remember your kids' names when you're 80. But animal research has shown that stimulating activities lead adult animals to develop more brain cells.

One study found that, with training, elderly humans improved several types of thinking skills - memory, reasoning, speed of processing - and the improvements stuck for at least two years.

But the study also found that, unlike an aerobic exercise that benefits the whole body, exercising one part of the brain didn't seem to strengthen others. Learning to make quicker decisions, for example, didn't improve memory, and vice versa.

Though there's no definitive proof yet, it makes sense, experts said, that using your brain will be good for it.

"It would seem that using anything is good for it, whether it's muscles or brainpower or whatever," said Claudia Kawas, professor in the departments of neurology, and neurobiology and behavior at University of California-Irvine.

"I really believe that keeping an active lifestyle both physically and mentally is a good idea, but as a data-driven scientist, I have to tell you that the data is not ideal."

Many people get a lot of mental stimulation at work, but don't plan for continuing it once they retire, said Joe Verghese, a neurologist at Albert Einstein College of Medicine. "Suddenly there's this dramatic decline in their activities, and I think that's a danger point," said Verghese, a regular Scrabble player.

At the least, he added, keeping your brain active after retirement will "improve your quality of life and reduce your chance for other diseases like depression."

Christopher Clark, director of the University of Pennsylvania's Memory Disorders Clinic, agrees with him, but worries that dementia patients' caregivers will go overboard. People should play games they like, he said, and no one should pressure those whose memories already are failing to do tasks they find too hard. He doesn't want to hear that people are saying, "Look Dad, you're doing the New York Times crossword puzzle, no matter what."

Given the state of the research now, doctors who study Alzheimer's disease say people worried about their memories should eat right, exercise, and have fun using their brains.

"Try to pick a cognitive activity that you think is fun and stimulating and that's probably good for you," said Robert S. Wilson, director of cognitive neuroscience at Rush University Medical Center.

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