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HEALTH BEAT: THE GOLDEN YEARS: EXERCISING THE BRAIN

Playing mind games

Seniors see improvement in brain-training classes

By Judith Graham
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Betty Hall, 85, jumped at the chance to take a "brain fitness" class at her senior living complex in Wheaton when the program started in late November.

"I thought my brain could use a little help," said Hall, who lives independently but worries about signs of forgetfulness, such as misplacing her keys and grocery lists.

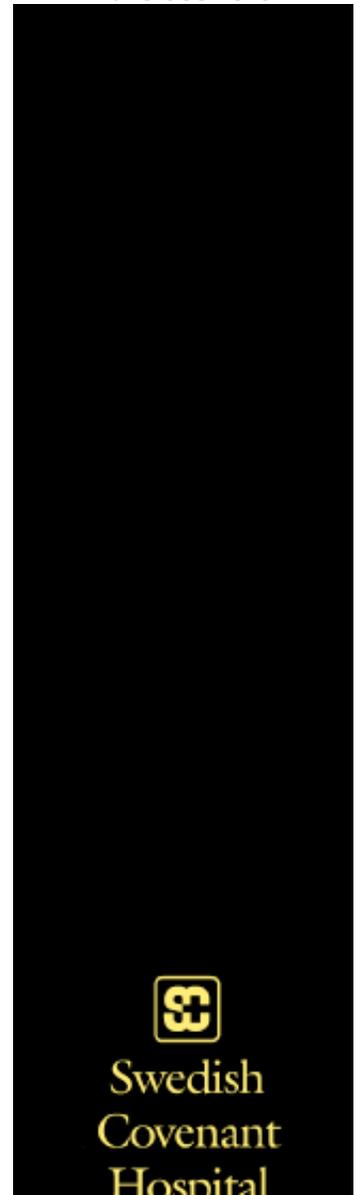
Since Thanksgiving, Hall has sat at a computer five days a week, matching words with different sounds ("fit" "wit" "admit"), listening for salient details in stories ("the cape was green," "the field was full of sunflowers") and practicing other brain-enhancing exercises.

Each session is an hour, and the program gets harder over each of its eight weeks.

Now Hall has a problem of a different sort. "I've won four times out of the last five at bridge club, and I think the players are going to shoot me because I keep remembering the cards people have," she said, laughing. "It's much easier for me to concentrate . . . and I brag about it everywhere I go."

Will health-minded seniors such as Hall, who walks two hours daily, focus on keeping their minds as fit as their bodies in the years ahead? Experts are convinced that this is an up-and-coming priority for aging Baby Boomers as well as people already in their 60s, 70s and 80s.

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Big demand expected

"Over the next few years, we will see these [brain health] programs burst into the mainstream with great force," predicted Dr. Elkonon Goldberg, a clinical professor of neurology at New York University School of Medicine and co-founder of Sharp Brains, a company that evaluates and helps markets brain-fitness programs.

A growing body of scientific studies supports the trend.

The newest research comes from a large, well-designed study known as Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE), published in December in the Journal of the American Medical Association.

Unlike previous studies, this one has a relatively long-term horizon. More than 2,000 healthy seniors in Baltimore; Birmingham, Ala.; Boston; Detroit; Indianapolis; and State College, Pa., were evaluated multiple times over five years.

Participants were divided into four groups. Three received special training in specific mental functions (memory, reasoning and speed of processing) and one group, with no training, served as a control.

The major finding was stunning: Relatively short training regimens -- 10 sessions of 1 to 1.5 hours each over five or six weeks -- improved mental functioning as long as five years later. Booster sessions helped advance these gains, and some people found it easier to perform everyday tasks, such as managing finances, after mental workouts.

"I think what this shows, conclusively, is that when healthy older people put effort into learning new things, they can improve their mental fitness," said Michael Marsiske, a member of the research team and an associate professor at the University of Florida at Gainesville. "And even if structured learning is relatively brief, you should be able to see the benefits of that learning for some time to come."

Different types of training

Not all training is alike, however. In the ACTIVE study, each form of mental training (for memory, speed or reasoning) affected only the function targeted without crossing over into other realms. Training results were strongest for speed of mental processing and weakest for memory.

"What this tells us is that specific brain functions may need different types of training," said Dr. Jeffrey Elias, chief of the cognitive-aging program at the National Institute on Aging, which helped fund the ACTIVE study.

With that in mind, researchers probably will design comprehensive programs with multiple types of training to forestall age-related mental decline, Elias predicted. Along these lines, Posit Science, a San Francisco-based company, is developing a cognitive-training program focused on visual stimuli to supplement an existing program that centers on auditory stimulation.

"Combined, we believe their impact will be multiplied," said Dr. Michael Merzenich, co-founder and a professor at the Keck Center for Integrative Neuroscience at the University of California at San Francisco.

Posit Science started selling its brain-fitness program to retirement communities in 2005; it's the software that Betty Hall has been using at the Wyndemere Senior Living Campus in Wheaton. Research to date shows the program shaves an average 10 years off the mental age of users, but how long the improvement lasts "is really an open question," Merzenich said. So far the time frame appears to be at least six months.

"It could be what will be needed is a continuous fitness regimen, where people do these exercises every day or every week," he suggested.

Left open is the question, Can cognitive training help offset the impact of brain conditions such as mild cognitive impairment, a condition that frequently precedes Alzheimer's disease, and dementia? And can it work with people with schizophrenia, which is an illness of the brain, or cancer survivors whose thinking becomes blurred after chemotherapy?

Some evidence suggests that training may delay mental decline associated with mild cognitive impairment, chemotherapy and schizophrenia, but so far there is no evidence that brain exercises can prevent Alzheimer's or other forms of dementia with an organic basis, Merzenich said.

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