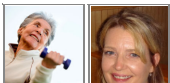


## Exercise Produces Super-Agers Font Size:

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What are super-agers? It's people in their 80s who have memory performance and brain size equivalent to people who are in their 50s. The term was defined by Dr. James Galvin during a recent "CBS This Morning" interview conducted in April 2013. Dr. Galvin, a professor of neurology and psychiatry at NYU Langone Medical Center in New York, studies brains via MRI scans.

His MRI research indicates that super-agers have more neuron brain cells and less atrophy and brain shrinkage than other people the same age.

How do these super-agers brains stay so robust? He said if researchers can figure that out, in theory it could lead to something "that would help all people."

## Power of Exercise

The good news is that there is plenty of new research that does show the power of exercise leading to improved brain function. NPR, formerly National Public Radio, revealed the study components from the *Proceedings of the National Academy of Sciences* by neuroscientist Art Kramer at the University of Illinois at Urbana-Champaign that shows the growth of brain cells via exercise.

Kramer took 120 very sedentary people and randomly divided them into two groups. They received brain MRI scans and memory tests before and after the year-long study.

Their ages ranged between 60 and 80. One group was given aerobic exercise consisting of walking three times a week and progressing towards 70 percent of their maximum heart rate with increases in speed and distance throughout the course of a year. The others in the control group were given toning, stretching and light-strengthening exercise.

## Walkers Rule

Kramer's research at the Beckman Institute for Advanced Science and Technology at the University of Illinois conclusively showed that the aerobic-walking group had an increase in brain volume.

One area of the brain that pumped up in size was the hippocampus and it lies deep in the central part of our brain. It's also very small – only an ounce or two. But what it lacks in size, it makes up for in important learning and memory. It processes new information, allowing us to recall bits of data when we need recollection later. Without the hippocampus we would be devoid of making new memories.

The amount that the hippocampus shrinks as we age, can in part, foreshadow conditions of dementia and Alzheimer's disease.

## Memory Improves

So what did the memory tests reveal at the study's conclusion? Kramer's research shows improvements in spatial memory with the aerobic walking group. Spatial memory has representations within working, short-term and long-term memory. And the processes are similar to the rat in a maze trying to locate food and are required in order to navigate around a familiar neighborhood. Our brains record this memory to get around and orient ourselves within our environment.

At the start of the study, both groups had similar scores on the spatial memory test. By study's end, the group who was given the stretching, toning and lightweight lifting had no improvements shown on their memory tests.

There are other scientists who point to the effectiveness of exercise and its boosting of the hippocampus brain function. In recent NPR transcripts, neuroscientist Peter Snyder, a researcher at Brown University's Alpert Medical School and Rhode Island Hospital, says several studies have been published recently on the power of exercise on the aging brain.

"The literature on exercise is just tremendous," he says. "What we find is that with exercise — with aerobic exercise, a moderate amount on a regular basis — there are chemical changes that occur in the brain that promote the growth of new neurons in [the hippocampus]," states Snyder on NPR.

"The major chemical change in the hippocampus during aerobic exercise is an increase in a brain protein called BDNF, which acts like a fertilizer during the birth of new brain cells by nourishing new connections between neurons," says Snyder on NPR.

Snyder believes that exercise, even more so than vitamins or nutritional supplements seem to have the most efficacy.

Mindy McCleery, doctorate of physical therapy and rehabilitation and director of rehabilitation for a facility that specializes in the active and aging population in Centennial, Colorado, agrees that it's important to exercise your body to ensure brain health. McCleery actively sees the positive changes in the senior population and the "profound impact exercise has to improve the quality of life." "What's good for the heart is good for the brain," says McCleery.

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