

## 4 Simple Rules to Shape Up Your Memory

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By Margery D. Rosen

**Rarely do you find neuroscientists, psychologists and physicians agreeing unequivocally on anything. But here's an exception: They all say that exercise is hands down the single best thing you can do for your brain.**



**"If we had a pill that could do what exercise does, its sales would put Viagra's to shame,"** says Laura L. Carstensen, director of the Stanford Center on Longevity and author of *A Long Bright Future*.

**Aerobic exercise "keeps cognitive abilities sharp and slashes your lifetime risk of Alzheimer's in half,"** says John Medina, an affiliate professor of bioengineering at the University of Washington School of Medicine and author of *Brain Rules*.

How is this possible? **Scientists think exercise boosts the flow of blood to certain parts of the brain**, spurring the release of brain-derived neurotrophic factor (BDNF), a brain chemical scientists have dubbed Miracle-Gro for the mind. BDNF stimulates the formation of new neurons in the hippocampus, the area involved in memory, learning and the ability to plan and make decisions. At the same time, the substance repairs cell damage and strengthens synapses, or the connections between brain cells.

Exercise also dials down stress, reduces the risk of stroke, helps control blood sugar and reduces the chances of falling by improving balance and coordination.

So if you're worried that your memory is fading as fast as your tennis game, it's time to get moving. **For the greatest brain benefit, follow these four simple rules.**

### **1: Start now**

**It's never too late to start exercising for brain health**, says Laura DeFina, M.D., medical director of research at the Cooper Institute and lead author of the study. "People always say, 'I'm 55 and I've never exercised. Does starting now really make a difference?' I tell them this: 'The answer is simple — yes, it absolutely matters.' "

In a pivotal study at the University of Illinois at Urbana-Champaign, researchers found that seniors 60- to 79-years-old who completed a six-month program of walking briskly on a regular basis showed an increase in the size of the hippocampus, as well as an increase in levels of BDNF comparable to those found in people almost two years younger. (The hippocampus typically shrinks by 0.5 percent each year, starting in some people as early as their 40s.) Two control groups in the study — one did stretching and toning exercises, another did nothing — showed no brain changes at all.

"This was the first time that we were able to demonstrate that you can actually increase the size of the hippocampus," says Kirk Erickson, a neuroscientist at the University of Pittsburgh and one of the study's lead authors.

"It was as if we'd rolled back the clock," he adds. **"It proves that exercising even in late adulthood, even if you've not been active before, is not futile. People need to know that dementia is not inevitable."**

### **2: Aim for 150 minutes of moderate exercise a week**

Do the math — that's just 2-1/2 hours a week. **"To get the brain benefit of exercise, the gold standard is 150 minutes of aerobic exercise, such as walking briskly, spread over the course of a week,"** says Medina. (Be sure to warm up before and cool down after with gentle stretches for five minutes.)

Nor do you have to train for a marathon to reap brain benefits. In a recent Canadian study, researchers followed a large group of elderly adults for 2-5 years. None were fitness fanatics; their daily activities included walking, cooking, gardening and cleaning house. The results were stunning: Year after year, 90 percent of those who were consistently active showed no decline in their ability to think and remember.

Anything that gets your heart beating faster works. "You want to break a light sweat and feel like you're huffing and puffing," says Majid Fotuhi, M.D., medical director of the Neurology Institute for Brain Health and Fitness in Lutherville, Md., "but you should still be able to speak."

Does it still count if you break up those 150 minutes into lots of smaller spurts? "That's the million-dollar question," says Erickson. "These figures have been largely based on studies of cardiovascular disease. While it's true that what's good for the heart is good for the brain, we can't say for sure that the figures also apply to brain fitness."

### **3: Add strength training**

Strength or resistance training — using free weights, bands or machines — does more than bulk up your biceps. **A study published in the Archives of Internal Medicine last year found that when women 70- to 80-years-old, who already had symptoms of mild cognitive impairment, did one to two hours of weight training two days a week for six months, they had better focus and decision-making skills than those in a control group who did only balance and toning exercises.** They also were able to resolve conflicts more readily. The benefits went beyond simply stemming memory loss, researchers said, to actual improvements.

### **4: Dance like nobody's watching**

"A colleague once told me, 'The problem with older people is they just don't dance anymore!' " says Carstensen. "He's right. **Dancing is terrific exercise; it's fun and something most people can easily do.**"

Besides giving you a great cardio boost, dance improves balance, coordination and flexibility. It's also a weight-bearing exercise like jogging, walking, skiing, climbing stairs or skipping rope. These impact-producing activities all help you build bones and slow bone loss, especially in the legs, hips and lower spine. Ballroom dances (think waltz, tango, foxtrot, salsa, cha-cha and swing) also work all the major muscle groups and build stamina.

**Recent studies also have found that dancing helps forestall memory loss and dementia.** A 2011 study in the Journal of Sports Science and Medicine found that older adults who met twice weekly for six months to dance the cha-cha improved their memory and cognitive performance on a variety of tests.

A 2005 study by researchers at McGill University in Montreal compared two groups of older adults — one group danced the tango twice a week, the other simply walked. After 10 weeks, both groups did better on several cognitive tests. But the dancers

outperformed the walkers on multitasking tests and saw additional gains in their coordination and balance. (Go to online article for more detailed tips.)

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