

Mind Games

7 ways to make your brain better, faster, and smarter.

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The No. 1 Thing You Can Do?

1. Move It

Quick -- what's the No. 1 thing you can do for your brain's health? Differential calculus, you say? Chess? Chaos theory? Nope, the best brain sharpener may be ... sneakers? Yup. Once they're on your feet, you can pump up your heart rate. "The best advice I can give to keep your brain healthy and young is aerobic exercise," says Donald Stuss, PhD, a neuropsychologist and director of the Rotman Research Institute at Baycrest Centre for Geriatric Care in Toronto.

Mark McDaniel, PhD, professor of psychology at Washington University in St. Louis, agrees, but adds, "I would suggest a combined program of aerobics and weight training. Studies show the best outcomes for those engaged in both types of exercise."

As we age, our brain cells, called neurons, lose the tree-branch-like connections between them. These connections, or synapses, are essential to thought. Quite literally, over time, our brains lose their heft. Perhaps the most striking brain research today is the strong evidence we now have that "exercise may forestall some kinds of mental decline," notes McDaniel. It may even restore memory. Myriad animal studies have shown that, among other brain benefits, aerobic exercise increases capillary development in the brain, meaning more blood supply, more nutrients and -- a big requirement for brain health -- more oxygen.

The preeminent exercise and brain-health researcher in humans is Arthur Kramer at the University of Illinois at Urbana-Champaign. In a dozen studies over the past few years, with titles such as "Aerobic Fitness Reduces Brain Tissue Loss in Aging Humans," Kramer and his colleagues have proved two critical findings: Fit people have sharper brains, and people who are out of shape, but then get into shape, sharpen up their brains. This second finding is vital. There's no question that working out makes you smarter, and it does so, Kramer notes, at all stages of life. Just as important, exercise staves off heart disease, obesity, diabetes and other maladies that increase the risk of brain problems as we age.

2. Feed It

Another path to a better brain is through your stomach. We've all heard about antioxidants as cancer fighters. Eating foods that contain these molecules, which neutralize harmful free radicals, may be especially good for your brain too. Free radicals have nothing to do with Berkeley politics and everything to do with breaking down the neurons in our brains. Many colorful fruits and vegetables are packed with antioxidants, as are some beans, whole grains, nuts and spices.

More important, though, is overall nutrition. In concert with a good workout routine, you should eat right to avoid the diseases that modern flesh is heir to. High blood pressure, diabetes, obesity and high cholesterol all make life tough on your brain, says Carol Greenwood, PhD, a geriatric research scientist at the University of Toronto.

If your diet is heavy, then you're probably also heavy. The same weight that burdens your legs on the stairs also burdens your brain for the witty reply or quick problem solving. The best things you can eat for your body, Greenwood notes, are also the best things you can eat for your brain. Your brain is in your body, after all. Greenwood's recommendation is to follow the dietary guidelines from the American Diabetes Association (available at diabetes.org).

Stop, Breathe & Relax

3. Speed It Up

Sorry to say, our brains naturally start slowing down at the cruelly young age of 30 (yes, 30). It used to be thought that this couldn't be helped, but a barrage of new studies show that people of any age can train their brains to be faster and, in effect, younger. "Your brain is a learning machine," says Michael Merzenich, PhD, a neuroscientist at the University of California, San Francisco. Given the right tools, we can train our brains to act like they did when we were younger. All that's required is dedicated practice: exercises for the mind.

Merzenich has developed a computer-based training regimen to speed up how the brain processes information (positscience.com). Since much of the data we receive comes through speech, the Brain Fitness Program works with language and hearing to improve both speed and accuracy. Over the course of your training, the program starts asking you to distinguish sounds (between "dog" and "bog," for instance) at an increasingly faster rate. It's a bit like a tennis instructor, says Merzenich, shooting balls at you faster and faster over the course of the summer to keep you challenged. Though you may have started out slow, by Labor Day you're pretty nimble.

Similarly, Nintendo was inspired by the research of a Japanese doctor to develop a handheld game called Brain Age: Train Your Brain in Minutes a Day, which has sold more than two million copies in Japan. No software out there has yet been approved by the FDA as a

treatment for cognitive impairment, but an increasing number of reputable scientific studies suggest that programs like Merzenich's could help slow down typical brain aging, or even treat dementia. The biggest finding in brain research in the last ten years is that the brain at any age is highly adaptable, or "plastic," as neurologists put it. If you ask your brain to learn, it will learn. And it may speed up in the process.

To keep your brain young and supple, you can purchase software like Merzenich's, or you can do one of a million new activities that challenge and excite you: playing Ping-Pong or contract bridge, doing jigsaw puzzles, learning a new language or the tango, taking accordion lessons, building a kit airplane, mastering bonsai technique, discovering the subtleties of beer-brewing and, sure, relearning differential calculus.

"Anything that closely engages your focus and is strongly rewarding," says Merzenich, will kick your brain into learning mode and necessarily notch it up. For his part, Merzenich, 64, has "4,000 hobbies," including a wood shop and a vineyard.

4. Stay Calm

So you may be saying to yourself, I have to sign up *right now* for Swahili and calculus and accordion lessons before my brain withers away! Stop! Breathe. Relax. Good.

While challenging your brain is very important, remaining calm is equally so. In a paper on the brain and stress, Jeansok Kim of the University of Washington asserts, in no uncertain terms, that traumatic stress is bad for your brain cells. Stress can "disturb cognitive processes such as learning and memory, and consequently limit the quality of human life," writes Kim.

One example is a part of the brain called the hippocampus, which is a primary locus of memory formation, but which can be seriously debilitated by chronic stress. Of course, physical exercise is always a great destressor, as are calmer activities like yoga and meditation. And when you line up your mental calisthenics (your Swahili and swing lessons), make sure you can stay loose and have fun.

Laugh Yourself Wise

5. Give It a Rest

Perhaps the most extreme example of the mental power of staying calm is the creative benefit of sleep. Next time you're working on a complex problem, whether it be a calculus proof or choosing the right car for your family, it really pays to "sleep on it."

Researchers at Harvard Medical School have looked at the conditions under which people come up with creative solutions. In a study involving math problems, they found that a good night's rest doubled participants' chances of finding a creative solution to the problems the next day. The sleeping brain, they theorize, is vastly capable of synthesizing complex information.

6. Laugh a Little

Humor stimulates the parts of our brain that use the "feel good" chemical messenger dopamine. That puts laughter in the category of activities you want to do over and over again, such as eating chocolate or having sex. Laughter is pleasurable, perhaps even "addictive," to the brain.

But can humor make us smarter? The jury is still out and more studies are needed, but the initial results are encouraging. Look for a feature on exciting new research about humor and intelligence in the September issue of *Reader's Digest*.

7. Get Better With Age

In our youth-obsessed culture, no one's suggesting a revision to the Constitution allowing 20-year-olds to run for President. The age requirement remains at 35. You've heard about the wisdom and judgment of older people? Scientists are starting to understand how wisdom works on a neurological level.

When you are older, explains Merzenich, "you have recorded in your brain millions and millions of little social scenarios and facts" that you can call upon at any time. Furthermore, he notes, "you are a much better synthesizer and integrator of that information."

Older people are better at solving problems, because they have more mental information to draw upon than younger people do. That's why those in their 50s and 60s are sage. They're the ones we turn to for the best advice, the ones we want to run our companies and our country.

As Barry Gordon, a neurologist at The Johns Hopkins School of Medicine and author of *Intelligent Memory: Improve the Memory That Makes You Smarter*, puts it, "It's nice to know some things get better with age."

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