

F E A T U R E A R T I C L E

Train the Brain

Can mental workouts give you a head start?

By Irene Kew

What’s an eight-letter word for brainy? Know it or not, when you answered or attempted to answer the question, you exercised your brains – or did what’s perhaps the cerebral equivalent of a bicep curl in the gym.

Call it brain fitness, mental gymnastics, or *cerebral* calisthenics, all across the country a cornucopia of computer software, games, and gadgets with names like BrainBuilder, Happy Neuron, and Mindfit have sprung up, proffering the promise of sharper, longer-lasting brain cells. The pitch: Just as exercising at the gym is good for your body, cranial crunches will reward you with a better brain.

For the longest time, humans believed that the brain was hard-wired by adulthood, setting the stage for inevitable decline as one’s finite number of brain cells slowly but surely disappear.

But new research has proven otherwise – you can, after all, teach an old mind new tricks. “Over the last two decades or so, there has been a revolution in brain science,” explains Dr. Peter Delahunt, a scientist with San Francisco-based Posit Science, which develops mind-fortifying software to help halt mental decline. “We now know that the brain can change [rewiring itself and adding new neurons] at any age, given the right type of stimulation.”

The burgeoning brain fitness industry is obviously cashing in on million of baby boomers entering their sunset years, but experts say the benefits are not limited to seniors hoping to stave off Alzheimer’s or dementia. In fact, according to Alvaro Fernandez, co-founder and chief executive officer of SharpBrains – an online “brain gym” with a slew of brain-boosting programs – with the information age causing more mental distraction than stimulation, people need to train their brains more than ever before.

Trawling websites, Fernandez adds, might, in fact, be hazardous to the health of our brain cells, “because that’s basically training you not to pay attention, not to remember things – [because] you know you can always find them over the internet.... Many people, I think, in that sense, outsource their brain to Google.” Training the brain can help process the flood of information, prioritize what’s important, and manage stress.

But not all brain exercises are equal, Fernandez stresses. Just as different gym machines work



different parts of the body, different tools sharpen different parts of the brain. For a well-rounded mental workout, you should attempt something new, work on variety, and ensure that it gets more difficult over time. In short, just doing sudoku puzzles or reading a book everyday won’t cut it.

“If you do the same thing over and over again, you’re only exercising one part of the brain and neglecting others – it’s more entertainment,” Fernandez explains. “If you work on a machine at the gym but always at the same difficulty level, you’re using muscle but not building it. The same thing applies to the brain – you have to always push the limits.” That’s why computer-based programs, though just one option among many others, often work best, because they pose active challenges for the brain to solve in a set amount of time.

“[It’s] not magic ...but [these programs] can be very effective to make sure that every second of that half hour that you have will be used to exercise your brain, versus just attending a lecture and hearing a guy talk for half an hour – which, from a cognitive point of view, is not too different from just watching TV.”



All this talk of brain buzz begs the question: Can brain exercises make us smarter or more creative? Fernandez says it’s important to distinguish between intelligence and cognitive abilities. “What people call IQ is basically logical intelligence, and it neglects to take into account many other things. Reality is closer to the concept of multiple intelligences, how some are good at running, some at dancing,” he explains. Cognitive abilities, on the other hand, which are rooted in neuroscience and neuropsychology, refer to specific brain functions that can be measured with tests: for example, attention, memory, language, and the ability to visualize. “The benefit of that approach is that it’s more real, and it explains how those areas can be trained.”

As for creativity, “pumping neurons,” so to speak, could help, albeit indirectly. “For instance, a great obstacle to creativity is stress,” Fernandez continues. “So indirectly, if you reduce the amount of stress [by improving cognitive functions], you enable people to be more creative.”

Bear in mind, however, that not everything can be trained. “I cannot tell you how to train your ability to plan better for the future,” Fernandez admits. “There’s not one specific tool right now in the market with good results.” Then again, he adds, maybe it’s just a matter of time: “I’m sure in five years, there will be a very good computer-based program that improves your ability to plan better in general, because there is a part of the brain that deals with planning. It’s just we don’t have that tool right now.”

Not all scientists share his optimism. With studies on the benefits of brain training still limited in size and scope, some researchers are not convinced computer programs are the way to go, or

if mental gymnastics have any long-term benefits at all. Dr. Timothy Salthouse, a psychology professor from the University of Virginia who analyzed an extensive number of studies supporting the popular “use it or lose it” view of mental aging, concluded in his report published in the journal *Perspectives on Psychological Science* that the mental-exercise hypothesis “is more an optimistic hope than an empirical reality.”

He didn't discourage it, however, recommending in his report that “people should behave as though it were true... If you can still do it, then you know you have not lost it.” Now, what's a 12-letter word for good thinking?

WHERE TO GET YOUR GRAY MATTER IN GEAR:

Brain Fitness Program 2.0 www.positscience.com

The program – 40 one-hour lessons – focuses on listening and memory. More programs that target other brain processes, such as vision, muscle control, hearing, and balance, are underway.

BrainBuilder.com www.brainbuilder.com

The program focuses on improving a person's working memory with exercises such as recalling numbers in order.

Happy Neuron www.happy-neuron.com

Forty web-based games that hone five brain functions: memory, attention, language, reasoning, and visual/spatial skills.

MindFit www.e-mindfitness.com

Twenty-four sessions designed to use thrice-weekly with exercises to strengthen skills such as attention, multitasking, and short-term memory.

MyBrainTrainer.com www.mybraintrainer.com

Ten short exercises aimed at improving reflexes and skills such as memory, mental ability, visual recognition, and memory.

SharpBrains www.sharpbrains.com

This one-stop “brain gym” offers a host of mental fitness programs that help improve everything from stress management to a basketballer's game intelligence.

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