**What Is the Memory Capacity of the Human Brain?**

“Mr. Osborne, May I be excused? My brain is full,” a student with a particularly tiny head asks his classroom teacher in a classic Far Side comic by Gary Larson. The deadpan answer to this question would be, “No, your brain is almost certainly not full.” Although there must be a physical limit to how many memories we can store, it is extremely large. We don’t have to worry about running out of space in our lifetime.

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The human brain consists of about one billion neurons. Each neuron forms about 1,000 connections to other neurons, amounting to more than a trillion connections. If each neuron could only help store a single memory, running out of space would be a problem. You might have only a few gigabytes of storage space, similar to the space in an iPod or a USB flash drive. Yet neurons combine so that each one helps with many memories at a time, exponentially increasing the brain’s memory storage capacity to something closer to around 2.5 petabytes (or a million gigabytes). For comparison, if your brain worked like a digital video recorder in a television, 2.5 petabytes would be enough to hold three million hours of TV shows. You would have to leave the TV running continuously for more than 300 years to use up all that storage.

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**TIPS AND EXERCISES TO SHARPEN YOUR MIND AND BOOST BRAINPOWER**

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They say that you can’t teach an old dog new tricks, but when it comes to the brain, scientists have discovered that this old adage simply isn’t true. The human brain has an astonishing ability to adapt and change—even into old age. This ability is known as neuroplasticity. With the right stimulation, your brain can form new neural pathways, alter existing connections, and adapt and react in ever-changing ways.

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The brain’s incredible ability to reshape itself holds true when it comes to learning and memory. You can harness the natural power of neuroplasticity to increase your cognitive abilities, enhance your ability to learn new information, and improve your memory.

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tip 1: Don't skimp on exercise or sleep \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Just as an athlete relies on sleep and a nutrition-packed diet to perform his or her best, your ability to remember increases when you nurture your brain with a good diet and other healthy habits.

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### When you exercise the body, you exercise the brain

Treating your body well can enhance your ability to process and recall information. [Physical exercise](http://beta.helpguide.org/life/exercise.htm) increases oxygen to your brain and reduces the risk for disorders that lead to memory loss, such as diabetes and cardiovascular disease. Exercise may also enhance the effects of helpful brain chemicals and protect brain cells.

### Improve your memory by sleeping on it

When you’re sleep deprived, your brain can’t operate at full capacity. Creativity, problem-solving abilities, and critical thinking skills are compromised. Whether you’re studying, working, or trying to juggle life’s many demands, sleep deprivation is a recipe for disaster.

But sleep is critical to learning and memory in an even more fundamental way. Research shows that [sleep](http://beta.helpguide.org/life/sleep_tips.htm) is necessary for memory consolidation, with the key memory-enhancing activity occurring during the deepest stages of sleep.

tip 2: Make time for friends and fun

When you think of ways to improve memory, do you think of “serious” activities such as wrestling with the New York Times crossword puzzle or mastering chess strategy, or do more lighthearted pastimes—hanging out with friends or enjoying a funny movie—come to mind? If you’re like most of us, it’s probably the former. But countless studies show that a life that’s full of friends and fun comes with cognitive benefits.

### Healthy relationships: the ultimate memory booster?

Humans are highly social animals. We’re not meant to survive, let alone thrive, in isolation. Relationships stimulate our brains—in fact, interacting with others may be the best kind of brain exercise.

Research shows that having meaningful relationships and a strong support system are vital not only to emotional health, but also to brain health. In one recent study from the Harvard School of Public Health, for example, researchers found that people with the most active social lives had the slowest rate of memory decline.

There are many ways to start taking advantage of the brain and memory-boosting benefits of socializing. Volunteer, join a club, make it a point to see friends more often, or reach out over the phone. And if a human isn’t handy, don’t overlook the value of a pet—especially the highly-social dog.