Why We Forget Things

As we age our memory begins to fail, but it is possible to stay mentally sharp and remember where you put your car keys

By Maria Blackburn

What did you eat for dinner last night? Did you turn off the lights before you left the house this morning? Where are your car keys? These are simple questions, the kind of details that seem so easy to remember. Why then, when we reach our 30s, does our memory start to fail us and make us feel so foolish?

The answer is simple, says Sam Wang, co-author with Sandra Aamodt of *Welcome to Your Brain: Why You Lose Your Car Keys But Never Forget How to Drive and Other Puzzles of Everyday Life* (Bloomsbury USA, 2008). When you understand how your brain works, it makes a lot of sense that you forget where you put your car keys and other similar details you hold in your short-term memory, he says.

"We think of memory as being like a hard drive, something that's written down and stays in place and you just read it. But that's not what memory is really like," says Wang, an associate professor of molecular biology and neuroscience at Princeton University. "In fact, your brain has a half-dozen systems of memory; each specialized for different kinds of tasks."

One memory system helps you remember things in the short term, like where your car keys are. Another memory system helps you remember skills like how to operate a car. "All of these different brain systems seamlessly work together so that day to day we don't think about having a number of memory systems, we just think about having a memory, period," Wang says.

Normal brain performance worsens with age. We're not talking about Alzheimer's disease, which causes two-thirds of dementia cases and is expected to affect some 81 million people worldwide by 2040. We're just talking about normal, age-related memory decline. "Normal memory loss is if you forget where your glasses are," Wang says. "Forgetting the fact that you wear glasses, that's not good."

Spatial navigation relies on a part of the brain called the hippocampus that's involved in short-term memory. The hippocampus shrinks as a person gets older causing short-term memory loss. "You might forget your keys, but you won't forget how to drive or what to do at a red light," Wang says. This loss happens surprisingly early. "After age 30, on average, people have a slow but steady decline in their short-term memory," Wang says.

However, just because age-related memory loss happens to everyone, that doesn't mean everyone has to accept it. "It turns out that many mental capacities are like muscles you can exercise," he says. "There are things you can do about it."

Some memory tips:

Get moving. "What's good for your heart is often good for your brain," Wang says. In fact, regular exercise—three 30-minute sessions per week—has been shown to be more effective in keeping the brain fit than any sort of computer software targeted at exercising your brain. When people reach their 70s, they start experiencing a decline in executive function, the set of abilities that allows one to plan, exercise self-control and make a good impression on others. "Studies have found that people who engage in physical exercise experience less decline and even improve in executive function as they age," Wang says. Scientists aren't entirely sure why this is, though a possibility is that just as exercise increases blood flow to the heart, it also increases blood flow to the brain.

Skip the dietary supplements. There is no good peer review evidence that shows that Ginkgo biloba has positive effects on one's memory, Wang says. But limiting red meat, eating lots of green leafy vegetables, drinking a little red wine every day (up to two glasses per day for women, up to three for men) and eating a bit of dark chocolate–all heart-healthy dietary changes–can help keep a brain fit.

Be intellectually engaged. "The No. 1 correlate of preserved mental function later in life is education," Wang says. "This doesn't mean you have to be highly educated in order to maintain positive function, but it does mean it's important to be mentally engaged as you age." Learning a language, traveling and having complex hobbies are all pastimes that engage mental activity and help preserve mental function.

Spend time with friends. Social interactions are some of the more complex mental activities we engage in, and seeing friends makes sure that people engage in these kinds of interactions. "One correlate of reducing depression is having friends and an active social life," Wang says.

Another word about exercise. Exercise also is associated with a reduced risk of dementia later in life. Studies show that people who exercise regularly in middle age are one-third as likely to get Alzheimer's disease in their 70s as people who did not exercise. It's not too late to start: people who begin exercising in their 60s have their risk of Alzheimer's reduced by half.

Get enough sleep. At a very basic biological level, scientists aren't exactly sure what sleep is for. "It is believed that sleep may be a time when memories are reconsolidated, sorted out and processed to form longer lasting memories," Wang says of this active area of research. One certainty is that sleep deprivation is a cause of stress and stress is bad for the body as well as the brain. "Stress hormones reduce the brain's ability to undergo change," he says. In addition, stress reduces the production of new brain cells.

Finally, some good news about brain function and aging. While you may not ever regain the short-term memory you had when you were 20, you can maintain and even improve brain function with age. "There are actually some brain functions that get better with age," Wang says. "Older people are better at controlling negative thoughts and adapting to negative information. They're also better at emotional self-control. And skills such as verbal ability do not decline with age. Vocabulary may even get better."