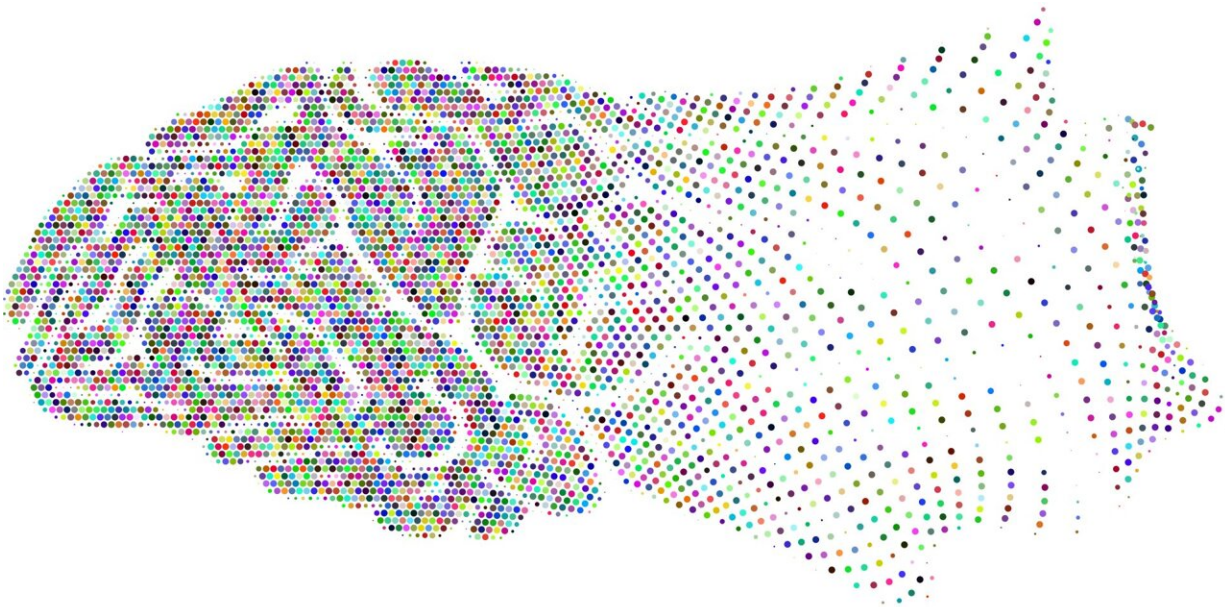


What really happens to our memory as we age?

March 15 2024, by Rachel Tompa



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For anyone over the age of 30 reading this article, here's some bad news for you: Your brain is already on the decline.

The good(ish) news? From the [brain](#)'s peak performance in our mid-20s, that decline is gradual, said Stanford neurologist Sharon Sha, MD. Despite common lore about aging and major lapses in memory, the effects of healthy aging on cognitive functions are actually quite subtle.

For example, a young or middle-aged adult can remember a sequence of seven numbers, on average, while a person in their 60s without dementia can hold onto six digits. When asked to list as many animals as they can in a short time frame, a skill known as verbal fluency, adults over 55 can list about 4% fewer than those under 55 years old.

"Around a generation ago, we assumed that when we get older, we dramatically lose our memory," said Sha. "That's really not the case."

For all the talk about age, memory and cognitive ability overloading the news cycle in this presidential election year, it seems like a good time to consult memory experts. Sha leads Stanford Medicine's Memory Disorders Division and divides her time between clinical work with patients who have Alzheimer's disease and other forms of dementia and leading clinical trials in patients with these conditions.

We asked her to discuss the links between aging and memory—and what steps we can take to boost brain health. Her answers have been lightly edited for length and clarity.

What causes lapses in memory as we age?

Oh, that's a big bucket. Certain conditions like dementia, and specifically Alzheimer's disease, affect us more when we're older. The biggest risk factor for Alzheimer's disease is age. But beyond dementia, we think about a lot of other possible causes for memory lapses. When someone comes into the clinic and says they're having [memory problems](#), we ask about medications, other [psychiatric problems](#) like anxiety and depression, and their sleep. There are a lot of factors that can affect memory and that are not necessarily expected in aging.

What's normal with memory and healthy aging, and

what's not normal?

As we get older, we know we're going to get wrinkles and gray hair; similarly, there are normal age-related changes in our brains. Our processing speed—how quickly we're thinking—may slow down. The amount of content in our working [memory](#) may diminish. That short list of items you can keep in your head when going to the grocery store might get shorter, but it should not drop to zero. Although dementia is linked to age, it's not an inevitable part of getting older.

How do you and other clinicians distinguish between normal aging and dementia?

There are screening tools that let us know if someone has a cognitive impairment that might indicate dementia. The definition of dementia also includes functional decline, meaning that someone is no longer able to live independently. If someone can no longer do their shopping or cooking, or remember to take their medications, that's concerning and beyond the expectation for normal aging.

There's also something we call mild [cognitive impairment](#) in which there is a cognitive decline from someone's baseline, but they are still functioning independently.

What happens to the brain when we lose memories?

We don't know exactly what happens biologically. But you can imagine that [memory loss](#) is part of the general atrophy and slowing down that happens to all parts of our bodies with age. We know there's a slight atrophy or shrinking of the brain with age, and that could include both a reduction in the volume and number of neurons as well as the insulation around neurons, called myelin. That loss of insulation also changes

processing speed. And this is all normal—just like you wouldn't expect to be as fast a runner at 80 as you were at 20.

When does the brain start that downward process?

It depends on the specific process, but generally speaking your brain is at its peak in terms of cognitive performance in your mid-20s. But if you're beyond your 20s, you probably recognize that you weren't making the best decisions at that point in your life. So, even if you're not at the peak of your brain function, what you have accrued now, if you're a couple decades beyond your mid-20s, is experience. It may take you longer to get to a decision, but that decision may be more likely to be right. I don't think any of us would trade our lived experience for a faster-working brain.

Are there things people can do to protect their memory and brain health?

This is the key question, because you can't fight aging, as much as you might want to. The benefit of aging is that you have all that experience, but how do we live and age healthfully? That's where research is supporting commonsense things like exercise. People often want to know what's the best kind of exercise. Any kind of exercise is better than sitting around. Aerobic exercise is the most studied in terms of brain health benefits, but smaller studies have also shown benefits for strength training and even being outside in nature. Just getting outside and moving your body is better than nothing.

We talk about cognitive stimulation, and anything that stimulates your brain in a positive way is great. If you hate crossword puzzles like I do, you're just going to get frustrated and that's not healthy, so pick something else. Learning a new sport, like pickleball, or a new kind of

dance, is great for your brain because it's exercise, learning something new and giving you that social exposure.

We know from the pandemic that [social isolation](#) was bad for us, and part of it is that our brain needs that social interaction for fuel. In terms of actual fuel, the Mediterranean diet has been most well-studied in terms of brain health. However, if you are not of a Mediterranean background, culturally, you don't need to give up your food traditions. Just make sure you're getting those fruits and vegetables and lean proteins.

And finally, good sleep. If you have sleep apnea or other sleep problems, your brain is not getting what it needs to function at its best.

So, pretty much the stuff we know we should be doing, right?

Exactly. There's no easy pill, though everyone wants that magic prescription for brain health. It takes work. But it's never too late—or too early—to start taking care of your body and your brain.

Provided by Stanford University

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