



## THE LONG GAME

It's true that some of our cognitive skills peak in our 20s (say, remembering where you left your car keys). But new science is revealing other empowering ways our minds sharpen over time.

BY KIMBERLY HISS

**FOR MANY YEARS,** neuroscience got aging all wrong. “Researchers used to assume adulthood was boring. You had cognitive development until about 18, then you had cognitive decline late in life—and that was the whole story,” says Joshua Hartshorne, PhD, assistant professor of psychology and neuroscience at Boston College. But with advances in neuroimaging and autopsy exams, as well as online studies that can reach unprecedented sample sizes, researchers have begun chipping away at old theories: “We’ve been seeing glimmers that more complicated things are happening in the brain throughout the life span,” Hartshorne says. It turns out we have cognitive abilities that actually improve over time—and appreciating those strengths is important,

says Elizabeth Kensinger, PhD, professor of psychology and neuroscience at Boston College. “Negative stereotypes absolutely cause us to underestimate the power of our brain as we age,” she explains. Here are seven ways we get better with age.

**1 You can see the forest for the trees.** While younger brains excel at noticing details, older brains take in the big picture. “We shift to processing information in a more conceptual way,” Kensinger says. This is in part thanks to the hippocampus, because it gets better at a process known as pattern completion, which entails overlapping similar memories from the past. When your brain groups like experiences together, you’re better able to distill their gist, and thus derive meaning from them. For example, say you get cut off on a winding stretch of highway. If you were a teenager, you’d likely zero in on the make and model of the speeding car. But today, you might connect the incident with a memory of another near miss on the same road—and make a mental note to be extra careful on that route. “This pattern-completion process helps us apply something we learned in a prior context to the now,” says Kensinger. It’s what we think of as wisdom, she adds.

**2 You have a knack for reading people.** Researchers use the term “emotion perception” to describe our capacity to pick up on others’ feelings. To measure this skill across age groups, Hartshorne and his colleagues designed an online study in which participants viewed photographs of eyes and tried to identify the emotions they portrayed. What he learned: Our emotion perception seems to peak later than other cognitive abilities and

remain sharp well into our 60s. “[Emotion perception] is really hard,” says Hartshorne. “This may explain why we’re seeing improvement later in life—because you’ve had more years on the planet to learn this skill.”

**3 You’ve got stamina.** “I think lots of us have this feeling that as we get older we’re less able to focus because there are so many demands on our attention,” says Laura Germine, PhD, associate neuroscientist and assistant professor of psychiatry at McLean Hospital and Harvard Medical School. But research suggests otherwise. In a 2015 online study with more than 10,000 participants, ranging from 10 years old to 70, Germine and her colleagues found that middle-aged adults had the greatest capacity to remain attentive. This staying power may have to do with changes in the brain’s white matter and prefrontal cortex that occur around the same period in life. Whatever the reason, your laser focus not only helps you get stuff done but it’s also tied to success in other cognitive areas, including memory and learning.

**4 Your brain builds resilience.** Neuroscientists believe that different regions in the brain are linked up by circuits, or networks. And they’re discovering that over the course of our lives, those networks become more adaptable to change.

“If there’s one region within a network that stops working so well... other regions within the network increase their activity to compensate,” explains Mirnova E. Ceïde, MD, associate director of psychiatry for the Montefiore Einstein Center for the Aging Brain in New York City. Researchers from Duke University and the National Institute of Mental Health found evidence of this phenomenon in a 2017 study when they used magnetic pulses to manipulate the brains of adults in their 60s and 70s: After the researchers decreased activity in an area that controls memory processing, the participants’ brains recruited other regions of the brain to help make up the difference.

**5 You’re more articulate.** Studies from the 1970s and before suggested that a person’s vocabulary and other aspects of crystallized intelligence (the technical term for accumulated skills and knowledge) were strongest at age 40, then trickled downhill. For a study published in 2015 in the journal *Psychological Science*, Hartshorne and his colleagues took another look at this theory, this time using web-based testing, and discovered the opposite: “We actually found continuing improvement in vocabulary into people’s 70s,” he says.

## 6 You spot silver linings.

When we’re young, our brains zero in on negative information, says Germine. Luckily, that changes: “As we get older, we prioritize the positive, which can be very helpful for our mental health,” she explains. Indeed, research suggests we get better at seeing the bright side. Kensinger coauthored a study that tracked how younger and older adults reacted to the Boston Marathon bombing. The results, published in 2018 in *Psychology and Aging*, showed that in the aftermath of the tragedy, older adults were more likely to focus on positive outcomes—such as the outpourings of community support and the acts of heroism—rather than the devastation and deaths, and other negative outcomes.

## 7 You have a lot going for you.

Our aging brains set us up for an especially purposeful time of life. “There’s a whole richness of things that come together,” says Germine. “Knowledge and expertise increase, emotional intelligence goes up, there’s a positivity bias, and over time you select goals that are meaningful to you and hopefully abandon less meaningful ones.” If scientists only study so-called fluid abilities, like speed and memory, the young brain looks like the better brain, she adds. “But ultimately, the brain is specializing across the life span, and the older you are, the more it’s specialized toward the life that you’ve chosen to live. And that’s a great thing.” ✨

## Brain Games

With decades of research under her belt, Kensinger uses insights from the lab to keep her own mind sharp. These are two drills she does when she’s sitting in a waiting room, or just taking a break:

### Word Scramble

Choose something in the room, and spell it out in your head: P-I-C-T-U-R-E. Then see how many new words you can make from it: *pie*, *trip*, and so on. This is a good exercise for your working memory (the same function that helps you remember why you walked into a room).

### Trigger the Feels

Focus on a nearby object (like a tree). Then think back to a happy memory linked to that object (say, climbing an old elm with a friend at summer camp). Kensinger likes this drill because it forces you to search your mental archives for feel-good memories you might not otherwise think about.