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"Is My Memory Normal?"

"I couldn't tell if I was distracted, losing my marbles, or both. So I checked into a brain lab to find out. What I learned changed my life."

By LISA DAVIS

I've always had a temperamental memory. A review I read 20 years ago about a movie I didn't see? No problem. What I did last month? Forget it. I'm perfectly capable of failing to remember my neighbor's name when I see her at the market. Heck, I'm perfectly capable of failing to recognize my neighbor completely. Recently I blanked out on a dinner party a friend had thrown for me a few years back. I apparently went, schmoozed, felt grateful for his effort—but forgot about the whole thing. (And no, I hadn't been tipsy.)

Mine is the kind of memory that causes a 50-plus person like me to worry, especially given the stats: Approximately 5.4 million Americans suffer from Alzheimer's disease, and researchers say the number will nearly triple by 2050. Experts warn that our society isn't prepared for the cost of caring for so many people who can no longer cope with daily life. Excuse me: I'm not only concerned about *paying* for caregiving; I'm just as worried about actually *needing* it.

Which is why I jumped at the opportunity to have my memory assessed and improved at one of the nation's cutting-edge cognitive clinics: the Neurology Institute for Brain Health and Fitness near Baltimore.

The institute is run by Majid Fotuhi, M.D., Ph.D., a neurologist who is pushing his colleagues to change the way we think about thinking. Memory experts have long focused primarily on the still-mysterious role played by plaques, tangles and other physiological components of the brain. But Fotuhi and a handful of colleagues have begun to home in on how people's lifestyles and daily routines affect their minds. The research represents a radically different approach to the study of the brain, and it's starting to get serious attention.

At the institute, Fotuhi works with therapists, a physiologist and a technician to treat a wide range of people, from college students

with concussions to people in the late stages of cognitive decline—as well as productive professionals like me who are fretting about their forgetfulness. Many of his patients get a personalized, multi-month "brain fitness program" to prevent problems, fix them or both. The promise: Treatment will cut the risk of a mental decline and also improve the workings of your memory right now.

So when I'm invited to visit the institute for a day-and-a-half crash session designed to give me a sense of the program, I utter the only response a frazzled boomer with a job, two kids, a husband and a dog can give: How soon can I come?

On a cold, gray morning earlier this year, I nervously make my way to the clinic, a medical building so nondescript and forgettable that it doesn't seem fair to patients. As I enter the suite of exam rooms, Fotuhi greets me warmly and ushers me into his office to begin my preliminary examination. The doctor is a teddy bear of a man with a gorilla-size CV: He has a medical degree from Harvard and a Ph.D. in neuroscience from Johns Hopkins; his research is published in leading medical journals, and he lectures around the world. But he's thoroughly approachable as he checks my reflexes and instructs me to jump from foot to foot—a quick way to assess my nimbleness and overall vigor. Then he sits down at his desk and invites me to talk, as if we had all the time in the world.

I run through my medical history quickly, since it's short and boring, with one significant exception: When I was in college, I was in a bad car accident—high speed, head-on, no seat belt. I hit my head so violently that when I woke up, I had amnesia. Like a character in a soap opera, I'd forgotten much of the preceding year, and my thinking was slow and scrambled for the next few weeks. I recovered, but I can't help wondering about whether that hard whack on the head has somehow affected my brain.

Fotuhi listens intently as I share my worries, but he doesn't seem all that concerned. If anything, he seems more interested in the less sensational aspects of my health. He asks about my cholesterol levels and wants to know about my exercise routine (atrocious), sleep habits (worse), stress levels (high, but whose aren't?). All very mundane, I think. All very critical, Fotuhi insists.

In recent years, scientists have learned that the brain is an exquisitely sensitive organ, growing and shrinking like a coral reef in response to its environment. A mounting stack of studies suggests that the condition of the body somehow affects the condition of the brain. According to Gary Small, M.D., director of the UCLA Longevity Center and author of *The Alzheimer's Prevention Program*, being overweight doubles the risk for Alzheimer's; being obese quadruples it. Diabetes can speed up brain shrinkage, as can high blood pressure.

A wide range of conditions—from sleep apnea to depression—also seems to have an impact on brain health. So does everyday stress. Studies indicate that the stress hormone cortisol can damage the brain's white matter pathways, making it harder for areas to communicate with one another.

Thankfully, there's an upside to the brain's vulnerability: Just as bad habits can impair its functioning, good ones can help it. Several studies, including a 2011 report in *Proceedings of the National Academy of Sciences*, show that healthy lifestyle choices help create new cells in the hippocampus, the seahorse-shaped region of the brain that processes short-term memories and determines which ones get put in long-term storage. "The best remedy for late-life Alzheimer's disease is midlife intervention," Fotuhi tells me as we finish my initial exam. "Baby boomers need to wake up and shake up their lives."

The next part of my evaluation, not surprisingly, is a memory test. "When I say 'start,' I want you to name as many words as you can that begin with the letter B," instructs Tracy Riloff, the institute's director of cognitive assessment. That turns out to be challenging when you've got only 60 seconds. I can't come up with "boy" or "book," but inexplicably I manage to pull out the words "brusque" and "bile." We move on to other letters and eventually other exercises: I draw shapes from memory, repeat Riloff's stories back to her and sort cards into categories. It all reminds me of the aptitude tests I took in elementary school.

It also makes me feel as if I'm getting a real workout—which is not far from the truth, since research shows that mental exercise can keep your brain in shape. A 2000 study reported that London cabbies plumped up their hippocampi as they learned

Forgetful? Fix It!

6 STEPS TO A STRONGER MEMORY

1 Learn something. Stimulating the brain helps it develop a resilience that allows us to fight off diseases like Alzheimer's, says Paul D. Nussbaum, Ph.D, an adjunct professor of neurological surgery at the University of Pittsburgh School of Medicine, who has been working with AARP on its brain health program. "Age doesn't matter," he says."We have the ability to shape our brains throughout our lives."

2 Sleep. Getting fewer than six hours of sleep a night can raise the risk of stroke, according to research presented at a 2012 Associated Professional Sleep Societies meeting.

3 Eat right. More than half your plate should be filled with green, leafy vegetables. Get plenty of fish, nuts and olive oil; steer clear of refined carbs. A 2009 Columbia University study found that this kind of diet may help ward off Alzheimer's.

4 Challenge yourself. "The number one memory complaint people have is that they're bad with names," says neurologist Majid Fotuhi, M.D., Ph.D. "People need to stop whining and realize they can do it!" His prescription: Memorize three names a day—such as those of an announcer on TV, a person in your company and a key player on your favorite sports team.

5 Walk with a friend. Psychiatrist Gary Small, M.D., calls this a triple threat against Alzheimer's disease: It gives you a cardiovascular workout, stress-relieving social interaction and mentally stimulating conversation.

6 Meditate. Reduced anxiety improves blood flow to the brain. A quick calm-me-down: Inhale for a count of seven, hold for a count of seven, exhale for a count of seven. Repeat seven times.

to navigate the maze of streets in the inner city. Other research has found that medical students bulk up their brains as they cram for exams. Learning a new language or just figuring out how to juggle a few balls—it all seems to stimulate your neurons and boost your brainpower. "If someone told me 20 years ago that the brain is like a muscle, I would have laughed," UCLA's Small says. "But in many ways, it is."

My muscle of a brain is exhausted, so I'm glad that the mental aerobics part of my assessment is over. Unfortunately, it's time for the physical part. I head into the next exam room, where a stationary bike is waiting for me. A stress test will assess how well my cardiovascular system is feeding my brain.

Cycling has never ranked high on my list of favorite activities, and I like it even less when I've got EKG leads taped to my chest. No matter how encouraging exercise physiologist Michelle Barnett is—and she's very encouraging—her words don't distract me from the fact that she's wearing a cute T-shirt over her toned abs while I lack both T-shirt and six-pack.

Still, the workout gets my heart pumping a little faster, and that's a good thing. According to psychologist Arthur Kramer, Ph.D., of the University of Illinois at Urbana-Champaign, physical exercise is one of the best gifts you can give your brain. A few years ago, Kramer persuaded a group of older adults to embark on a relatively modest exercise regimen, in which they walked three days a week for 45 minutes each time. "Nobody won any medals," Kramer says, but the walkers showed a substantial improvement on cognitive tests at the end of the yearlong study. What's more, brain scans displayed a 2 percent increase in hippocampus size. Since the hippocampus generally shrinks about half a percent a year after age 50, his subjects weren't just slowing the march of time but reversing it. "If we had a drug that did that, everyone would pay a lot of money for it," Kramer says. "But this doesn't cost a thing. Just take a walk."

After finishing my stress test and getting my shirt back, I head down the hallway to meet with a radiology technician. I lie on an exam table as he waves an ultrasound wand up and down the side of my neck. A rhythmic whooshing noise fills the room. It's the sound of the blood in one of my carotid arteries, the main feeders for my brain. Plaque can clog these arteries, just as it can

stop up the arteries that go to the heart. And just like a clot in a coronary artery can cause a heart attack, one in a carotid can cause a stroke. Even a partial closure can leave your brain operating at reduced power. So the technician is checking how well things are moving—and I'm happy to learn that my blood is flowing freely. Later I also get good news after an EEG, a test that entails covering my scalp with goop and wearing an electrode-studded skullcap that traces my brain waves.

By now I'm ready for a break, and luckily it's time for Taking It Easy 101. At the institute nearly everyone learns mindful meditation with brain fitness director Eylem Sahin. Research offers tantalizing suggestions that the practice may be good for memory. It's simple, though not necessarily easy: All it takes is a relaxed awareness of one's thoughts, sensations and emotions. Sahin helps me perfect my belly breathing as I picture myself in a remote meadow and concentrate on progressively relaxing my body, from my feet to my eyebrows. Sahin says I'm learning to simultaneously focus and relax, but I feel as if I'm giving my mind a nice, relaxing bath. Aah …

And with that, my day is done.

Memory loss is a horrible thing. It makes your life seem even more fleeting than it already is, and it's frustrating, embarrassing and scary. So I'm feeling really anxious as I head back to the institute the following day to hear Fotuhi's diagnosis. His words bring a wide smile to my face.

"You did very well on the cognitive assessment," the doctor tells me after I'm settled in his office. In fact, can I brag? (I never get to do that about my memory.) I scored near the top of the standardized rankings. Woo-hoo. The idiosyncrasies of my memory may be related to my long-ago concussion, Fotuhi says. But he tells me that almost no one gets into midlife years without some mind-threatening history or habits. Besides, memory is a quirky thing.

A lower score wouldn't necessarily be bad news. If I were in the institute's three-month brain fitness program, I'd get intensive treatment for any medical problems, as well as help with nutrition and exercise. I'd practice meditation, do biofeedback and get plenty of stimulation from computer games, puzzles and brainteasers. Fotuhi provides no guarantees (and if a person has Alzheimer's disease, for instance, such remedies certainly won't make it disappear). But, he says, his multipronged approach almost always brings improvement.

"A lot of people think that if they're having memory problems, their memory is lost and gone for good," Fotuhi points out. "They don't realize that the brain is kind of like their biceps. Both can be toned up at any age."

So even with my impressive scores, Fotuhi offers a preventive prescription: "You should start getting more sleep—and exercise," he tells me. Meditation would be a big help, too, he says, especially when I'm feeling stressed. I should also do something nice for myself every day—happiness is very good for the brain. All those changes should get my hippocampus as big as possible, creating a buffer against the ravages of time.

Since my trip to the brain health clinic, I've been following this advice: living the clean, well-rested, well-exercised life, or at least trying to. I've noticed that I'm having fewer moments when I feel as if I've lost my mind in the haze of my exhaustion. And I feel better than I have in years. The fact is, I'm discovering that what's good for the brain is good for the body, and for the psyche, too. I figure the way I'm living now will give me the best chance possible to look back on my life when I'm nearing the end—and actually remember it.

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