

Train your brain to stay sharp as you age

Toronto researchers show memory improves with thinking tests

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SPECIAL TO THE STAR

It happens all the time. I tell a friend about something I read online but stop to say, "I don't remember if it's from the *London Times* or the *Washington Post*?.. or maybe *Slate*."

I've always blamed my forgetting the source on too much browsing, too many sites: information overload.

But Nicole Anderson, a researcher at Baycrest's Kunin-Lunenfeld Applied Research Unit, set me straight. It's not too much information that's my problem; it's too little action in my hippocampus.

Even if you're an aging adult who is healthy, explains Anderson, "you remember the information but forget where you learned it. The source is more vulnerable (to memory loss) than the facts themselves."

In other words, you might retain content as you get older but you have more trouble remembering context.

Or maybe not — if you train your brain. It seems to have worked for Wayne Cook, a 69-year old Torontonian who retired as president of a small manufacturing company.

He recently took part in Anderson's ongoing research study into whether cognitive rehab can improve an older adult's ability to remember the source of information.

After an initial assessment, Cook attended 36 training sessions over eight days. Each session lasted 10 to 15 minutes. "I sat in front of a computer screen with a speaker in front of me," recalls Cook. "A word would be presented, either spoken or appearing on screen."

When that same word was presented again, either spoken or on screen, Cook had to say "yes" if it was repeated in the same way it was originally presented. Or "no" if it



Baycrest researcher Nicole Anderson is studying whether exercising the brain can improve memory.

was switched.

At first, the repeated words were separated by only a few seconds and one or two other words. But gradually, there were up to 50 different words between the repeated words.

"The difficulty was remembering whether it had been on screen or spoken," says Cook.

"It is incredibly difficult for older adults to do, even after a couple of seconds delay," explains Anderson. "People's ability to remember not just information, but whether they saw it or heard it before, declines even with healthy aging. And it declines even more among people with mild cognitive impairment."

It's why, as we get older, we'll tell someone an anecdote without realizing that they're the one who told it to us in the first place.

Anderson says her subjects, most between the ages of 65 and 80, show improvement after the training sessions. "They are really, really improving on this task."

She's still collecting data from brain scans done after the training concluded, hoping they'll show ac-

tual changes in the brain — "richer neural networks" — and that study participants are using more areas of the brain after training than they used before.

Cook says he achieved higher levels of remembering the source of the word as the training progressed. "My memory got better," he says. "I would say it's better now."

Among those in the study are some people with mild cognitive impairment — "memory deficits that are greater than what you expect for their age," Anderson explains. "But attention, language, problem solving and visual/spatial skills remain intact. There can be mild cognitive impairment with no impact on everyday functioning."

Taken into account in assessing mild cognitive impairment is educational level. That's because education, explains Anderson, "develops richer brain networks. You have more connections and synapses between cells, so even if you lose some because of disease and dementia pathology, you have more left over. You don't feel the impact of de-

mentia in the same way as people who don't have these protective factors."

Education and exercising the brain as you get older are just two ways of delaying, and even reversing to some extent, the effects of aging on the brain. Other important factors are diet and physical exercise, says Baycrest scientist Carol Greenwood. The better the adherence to a healthy diet — the Mediterranean diet, for example, or Canadian nutrition recommendations — "the better the cognitive retention," advises Greenwood.

Researchers "are now looking at more global aspects of diet rather than individual nutrients such as fish oil and antioxidants," she says.

And she warns, "Canadians are way behind on fruit and vegetable intakes."

HEALTHY TIPS

Here are six ways to help keep your brain healthy, suggested by Dr. William Reichman, president and CEO of Baycrest.

- Exercise your body: "Evidence is mounting that physical exercise is very important — not only to keep the blood flowing and the heart strong, but also for nourishing and maintaining the integrity of nerve and brain cells. Exercise seems to stimulate them to be vital and to differentiate. If you're not involved in physical fitness now, it's not too late."
- Keep your brain exercised: "If you're a couch potato in front of the TV and not doing creative problem solving, that's not good."
- Confuse the body and the brain: It's important to exercise muscles "in novel ways" and not keep doing the same exercises. "You have to confuse muscles and challenge them with new demands. It's the same for the brain." Learn a new language, challenge the brain with new demands, new problems to master.
- Minimize cardiovascular risk: "That's as important for the brain as for the heart." Control blood pressure. Keep weight down. "Obesity is not good for your brain, particularly obesity in midlife."
- Maintain good glucose regulation: "Type 2 diabetes is not good for the brain. Inadequate glycemic control does have an impact, not only on cognition today but also on the risk of getting Alzheimer's."
- Follow a healthy brain diet: "Evidence is mounting that the Mediterranean diet is not only good for the heart, but also seems to be protective for the brain." That includes green foods: leafy vegetables like spinach, kale, broccoli; olive oil; blueberries and foods with Omega-3 fatty acids.

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