

Keep aging brains sharp: Brain games, exercise and diet help prevent cognitive slide

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Exercising, eating a healthy diet and playing brain games may help you keep your wits about you well into your 80s and even 90s, advises a new book by researchers at George Mason University.

"These are all cheap, easy things to do," says Pamela Greenwood, an associate professor in the Department of Psychology on Mason's Fairfax, Va. campus. "We should all be doing them anyway. You should do them for your [heart](#) and health, so why not do them for your [brain](#) as well?"

For the past 20 years, Greenwood and Raja Parasuraman, University Professor of Psychology, have studied how the mind and brain age, focusing on Alzheimer's disease. Their book, "Nurturing the Older Brain and Mind" published by MIT Press, came out in March. The cognitive [neuroscientists](#) geared the book to middle-aged readers who want to keep their mental snap.

"We know that if we can put off dementing illnesses even by a year or two through [lifestyle changes](#), that will reduce the number of people with Alzheimer's disease, which is reaching [epidemic proportions](#)," Parasuraman says.

Not everyone's brain declines when [retirement age](#) hits. "You can look at a group of 65-year-olds — some are in nursing homes, and some are running the world," Greenwood says.

Now that more workers are staying on the job longer for economic

reasons and because countries are upping the retirement age, keeping the mind agile becomes paramount, Parasuraman says.

For the book, Parasuraman and Greenwood examined only scientific studies, theirs and others, ranging from neurological to physiological. A few surprises leaped out of the data.

"Several old dogmas were overturned," Parasuraman says. "There's the tired old joke that we're losing brain cells as we age — maybe starting as young as 20 or 30 — and it's all downhill after that."

Not so, new research reveals. Not only are some 60-year-olds as sharp as 20-year-olds, but their brains still create new cells. Brain cells may not grow as fast as bone or skin cells, but grow they do, particularly in the hippocampus. "It's the area of the brain that's very important to memory and is affected by Alzheimer's disease," Parasuraman says.

Novel experiences and new learning help new brain cells become part of the circuitry. Parasuraman points to a study of terminally ill cancer patients whose brains were still forming new neurons. "If a person who's in a terminally ill state can generate new neurons, then surely healthy people can," Parasuraman says.

Brain games and new experiences may build up "white matter," which insulates neurons as they carry signals, Greenwood says. In older brains, this white matter insulation develops holes and signals go awry.

Older adult gamers are winning skills to help them move through life, Parasuraman says. "We are looking at everyday problem solving," he says. "Are you better at balancing a checkbook? Are you better at making decisions in a grocery store? We're finding you get better at those tasks (after playing the video games in the study)."

Moving large muscle groups also builds brain matter. In one study detailed in the book, older, sedentary people began walking or did stretching exercises for 45 minutes, three times a week. "Those people actually became smarter over time," Greenwood says. "You don't have to be running Ironman marathons. You can just walk briskly three or four times a week."

Another best bet for an active mind is a nutritious diet that limits calories to the minimum amount needed to keep a body healthy. No starvation diets, though. "The strongest evidence we have is not very pleasant, which is dietary restriction, reducing calories," Parasuraman says. "That clearly improves longevity and cognition. The evidence in animals is very strong. Such dietary restriction may never be popular. But perhaps every-other-day fasting as an approximation to it is something people would tolerate: You eat normally one day, and the next day you don't."

Popping supplements won't fill a nutritionally deficient diet, Parasuraman says. "A lot of people think, 'I can eat junk food and then take a pill.' No. You have to eat fruits and vegetables, leafy vegetables. It has to be part of the regular diet because otherwise it's not absorbed."

Fat cells help make up cell membranes. The unsaturated fats found in fish and olive oils may boost flexibility in these membranes. The more flexible membranes are, the better they may work, scientists theorize. Saturated fats such as butter have to go because these fats vie with healthy fats for a place in the cell membrane, Greenwood explains.

Greenwood and Parasuraman want people to know that getting old doesn't mean getting senile. "The bottom line message of the book is really a hopeful one," Greenwood says. "There are lots of things that you can do (to keep your brain healthy)."

Provided by George Mason University

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