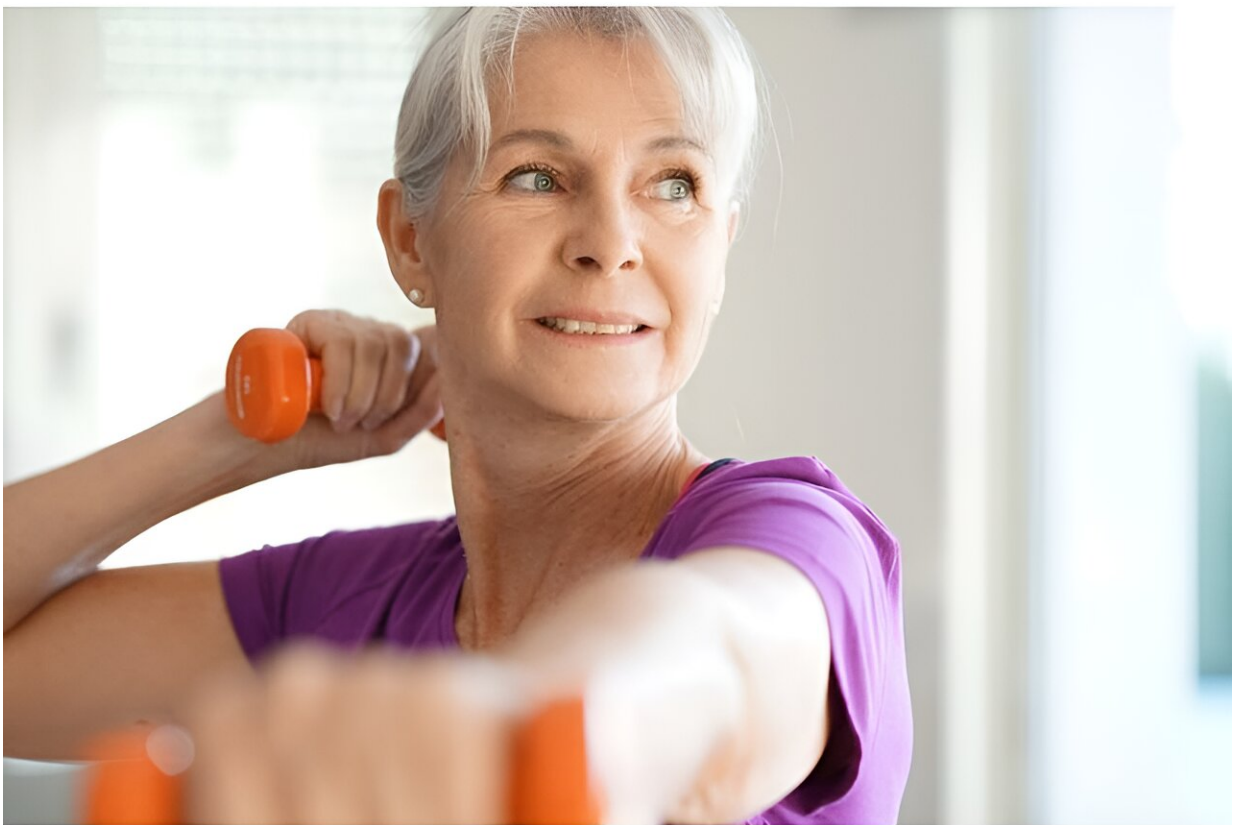


Healthy living builds 'cognitive reserve' in brain that may prevent dementia

February 6 2024, by Ernie Mundell



New research suggests healthy lifestyles can help stave off dementia,

perhaps by building a resilient 'cognitive reserve' in the aging brain.

The study was based on the brain autopsies on 586 people who lived to an average age of almost 91. Researchers compared each person's lifestyle and end-of-life mental skills to their neurological signs of dementia, such as brain protein plaques or changes in brain blood flow.

None of these brain factors seemed to greatly affect the positive connection between healthy living and a person's end-of-life mental skills, said a team led by Dr. Klodian Dhana, of Rush University Medical Center in Chicago.

That means that [good nutrition](#), [regular exercise](#) and other factors may instead "provide a [cognitive reserve](#)" that buffers against negative changes going on within the brain—allowing older folk to "maintain cognitive abilities" over time, the researchers said.

"You can almost sort of cheat the biology a little bit and still not get the symptomatology as early" as someone who's less healthy, said Dr. Liron Sinvani, who wasn't involved in the study. She directs geriatric hospitalist services at Northwell Health in Uniondale, N.Y.

The study was published Feb. 5 in the journal [JAMA Neurology](#).

As Dhana's group notes, it's long been known that certain lifestyle choices—eating well, exercising, avoiding smoking and heavy drinking—are linked to lower rates of dementia.

But how does healthy living work its neurological magic?

To find out, they used data from the ongoing Rush Memory and Aging

Project. Over the course of 24 years, the project tracked the lifestyle histories and [end-of-life mental function](#) of 586 participants, all of whom died and had donated their brains for autopsy.

The group was long-lived, averaging just under 91. Seventy-one percent were women.

Dhana's group conducted brain autopsies that focused on classic neurological signs of dementia: A buildup of amyloid protein plaques and tangles within [brain tissue](#), as well as changes in the vasculature ([circulatory system](#)) of the brain that might point to reduced blood flow caused by events such as strokes or mini-strokes.

As expected, they found that folks who'd lived very healthy lives were far more likely to maintain their wits as they neared the end of life. Every one-point increase in a person's "lifestyle score" was associated with a rise in their "global cognitive score" at the end of life, the researchers found.

However, most of that relationship had little correlation with brain changes seen on the autopsies.

In other words, even though protein plaques and tangles or impaired vasculature might appear in the brain of a deceased person who'd lived in a healthy way, that person's mental scores remained high.

The only (very slight) effect was seen for the buildup of amyloid plaques in the brain. Dhana's group calculated that reductions in amyloid plaque might account for 11.6% of the lifestyle/cognition relationship.

All of this bolsters the notion that healthy living provides the [aging brain](#) with some kind of "reserve," allowing it to function well even while changes that typically signal dementia are unfolding.

So, "if you take two people and they both have the same amount of this bad protein in their brain, the person who has the healthier lifestyle will be able to have better function, cognitively," explained Sinvani, who is also professor of medicine at the Zucker School of Medicine at Hofstra/Northwell.

"You can function at a higher level, function normally, function without impairment for longer," she said.

When it comes to exercise, Sinvani believes the study also shows that you're "never too old and never too frail to start improving your lifestyle."

Current exercise recommendations call for at least a total of 150 minutes of physical activity per week. For older folks who've been inactive for a long time, Sinvani suggests consulting with a doctor and/or personal trainer before launching into a workout regimen.

More information: There's more on the interplay between lifestyle and brain health at the [U.S. Center for Disease Control and Prevention](#).

Klodian Dhana et al, Healthy Lifestyle and Cognition in Older Adults With Common Neuropathologies of Dementia, *JAMA Neurology* (2024). [DOI: 10.1001/jamaneurol.2023.5491](https://doi.org/10.1001/jamaneurol.2023.5491)

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