American Psychological Association

William Milberg, PhD — Cognitive Neuropsychologist

THE RIGHT CHORD

He describes himself as a "frustrated, bad jazz guitarist," but as a professor of psychology in the Department of Psychiatry at Harvard Medical School and an associate director of research at the VA Boston Healthcare System, William Milberg, PhD, couldn't be more in tune.

Just as jazz can involve the complex arrangement of many different instruments, the risk factors for age-related cognitive disorders and dementia are complex and intertwined, as Milberg knows.

For instance, numerous genes have been implicated in age-related cognitive disorders, but they are not the only culprits responsible for the onset of disease. In many if not all instances, environmental and epigenetic — hereditary changes in the way our genes work — factors determine whether or not a disease will present itself.

With Alzheimer's disease and other forms of dementia affecting as many as 1 in 3 seniors, the need to understand this complex ensemble of risk factors is an important priority.

Stanley Rowin Photography

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BRAIN SCIENCE AND COGNITIVE PSYCHOLOGY

Psychologists working in the field of brain science and cognition study how the human mind thinks, remembers and learns. They use psychological science to understand how we interpret events and make decisions.

SEGUE TO PREVENTION

Because of Milberg's work, however, we are a lot closer to understanding how the health of our bodies relates to the health of our minds. His research examines the interplay between physical conditions like hypertension and diabetes and cognitive disorders to see how these illnesses could serve as risk factors affecting brain health.

Based on what he's learned so far — as the heart goes, so goes the brain. In fact, when it comes to keeping our brains healthy, Milberg says, "It's all the usual suspects of diet and exercise. Once you're on the road toward impaired cardiac and metabolic function, you may also be on the road toward impaired brain function."

What's more, Milberg believes that soon we'll have the ability to identify red flags for cognitive disease much earlier on — in young adults even — thanks to advances in medical imaging and our understanding of those images. For instance, neurologists can glean significant clues into the brain's health because improvements in brain imaging allow them to measure both its structure and the distribution of the blood supply. His lab has also been exploring how stress and simple concussion affect young adult veterans, revealing some evidence of changes in the brain that may be associated with aging as early as the age of 30.

REVERSING THE CLOCK

As this technology and the understanding of the brain improves, Milberg is hopeful that he'll one day be able to better understand when cognitive decline actually begins and what can be done to prevent it.

"I want to be able to turn the clock back to the early stages and find out whether there are interventions that would prevent disease before it's too late," he says.

Ultimately, he hopes to curtail the current trends within the aging population. Until then, he'll keep pursuing better outcomes.

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