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2007 ASA-NCOA Joint Conference

EXPERTS REVEAL KEYS TO BRAIN HEALTH

Note to readers: This issue of Aging Today is being released later than scheduled in order to bring you initial coverage of the 2007 Joint Conference of the American Society on Aging and National Council on Aging, held in Chicago, March 7–10. More extensive coverage will appear in subsequent issues.

By **PAUL KLEYMAN**

A daily glass of wine, plenty of fresh fruits and vegetables and a brisk half-hour walk to a creative arts workshop are among the key ingredients for maintaining a healthy brain—and possibly fending off the effects of Alzheimer’s, heart disease and diabetes—according to a panel of leading researchers who spoke at the recent 2007 Joint Conference of the American Society on Aging and National Council on Aging in Chicago.

“The evidence that a moderate amount of alcohol is good for your health is overwhelming,” stated Francine Grodstein, an associate professor of epidemiology at Harvard Medical School, Cambridge, Mass., during the closing general session titled “Staying Sharp: Current Advances in Brain Research.” Noting that “the same thing is true for exercise,” Grodstein addressed cutting-edge findings about the aging brain along with molecular biologist Robert Vassar of Northwestern University’s Center for Geriatric Medicine in Chicago and Gene D. Cohen, director of George Washington University’s Center on Aging, Health and Humanities, Washington, D.C.

PREVENTING MEMORY IMPAIRMENT

Calling it a myth that only red wine is beneficial, Grodstein said that in numerous studies, moderate amounts of any alcohol—one-half to one glass of wine daily for women, one to two glasses for men, or an ounce of distilled spirits—have shown benefits for brain health, cardiovascular functioning and even diabetes type 2. Grodstein cautioned, though, that research is also demonstrating that more than moderate intake of liquor can be quite damaging to health. Also, she encouraged older adults to check with their physicians about possible adverse interactions of alcohol with drugs they are taking or other potential problems to their health.

Grodstein, who is affiliated with Brigham and Women’s Hospital in Boston, focuses her research on “how we can change our lifestyle to prevent memory impairment from happening.” In particular, she is studying cognitive functioning among the 20,000 women, ages 70 and older, who are participating in the Nurse’s Health Study. She also leads studies involving randomized clinical trials of vitamin supplements and aspirin. To date, she said, little evidence shows that vitamin supplements enhance brain functioning. She recommended, “Getting your vitamins from eating the right foods is a much better way of staying healthy,” especially in the form of fresh fruits and vegetables.

Generally, Grodstein said, research shows that “the kinds of things that keep your body healthy are probably going to keep your brain healthy as well.” For example, she continued, “We have found that people who exercise regularly lose their memory at a much slower rate than people who don’t.” She emphasized, “We’re not suggesting that people in their 70s start training for the marathon” and explained that people who walk regularly, approximately five days a week for about a half hour or so each time, yield some mental benefits. Walking at a brisk pace—but not at a casual stroll—is as beneficial for older people as more vigorous aerobics or similar exercises, she said.

ALZHEIMER'S AND AEROBICS

“What’s good for your heart is also good for your brain,” declared molecular biologist Robert Vassar of Northwestern University’s Center for Geriatric Medicine. For instance, he said, “Many of the risk factors for Alzheimer’s disease are the same ones for cardiovascular disease. Usually the cardiovascular disease precedes Alzheimer’s disease by maybe a decade.”

In part, Vassar said, his research is exploring apparent connections between the aging cardiovascular system and blood supply to the brain—in particular, the delivery of oxygen and energy supply to that complex, three-pound organ and whether impeded flow could be a trigger for Alzheimer’s disease. “It may be a connection with the reasons why exercise is protective for Alzheimer’s,” he noted.

Vassar explained that aging cardiovascular systems—including blood vessels in the brain—tend to become clogged with cholesterol, constricting the flow of oxygen and glucose. Noting that scientists have known for two decades that Alzheimer’s patients experience reduced blood flow and have difficulty using glucose in the brain, he continued, “Our hypothesis is that over time this chronic starving of the brain of its oxygen and glucose may be a precursor” to the manifestation of Alzheimer’s.

Vassar and his colleagues hope to demonstrate that improving blood flow to the brain, primarily with aerobic exercise, can keep hearts healthy, reduce arteriosclerosis and limit the build-up of destructive beta amyloid peptides into the mind-strangling plaques associated with Alzheimer’s. Scientists have yet to understand why this process happens, he said, but the enzyme responsible for generating the amyloid peptides is “a fabulous drug target that many companies are now pursuing to develop small molecule inhibitor drugs to block the enzyme.”

Generally, he observed, the benefit of physical activity “seems to work across species.” Vassar said that the advantages of exercise seem to accrue not only for human beings, but also for mice. His laboratory’s experiments with mice that develop Alzheimer’s show that running them on a little wheel and providing them an environment enriched with activity-stimulating toys leads to shrinking of the amyloid plaques that build up in their brains. Consequently, these mice actually improve their performance on memory tests.

Critical to Vassar’s research, the rodents at his laboratory are treated with compounds inhibiting the use of glucose sugars, the main energy source for the brain. “When we do that we find an enzyme is elevated in the brain that produces the amyloid,” he said. Although exercise diminishes the animals’ plaques, Vassar stressed that much work remains to be done to establish this line of research and its effects on people.

THE PIZZA CAPER

Gene Cohen of George Washington University explained that although promising medical research on dementia is being conducted on many fronts internationally, the solution to slowing the progression of Alzheimer’s or reversing it remains elusive. However, he said, “There’s a growing state of the art in terms of what people can do to maximize the quality of life of individuals in the face of that adversity.” Comprehensive, long-term planning to help those diagnosed with dementia enjoy as full a life as possible is an “enormous challenge,” Cohen said—one he faced when both of his parents developed dementia disorders. “But, in retrospect, there was enormous satisfaction that I was able to do that.”

An example of positive brain development with aging, Cohen said, involved an incident with his wife’s parents in the mid-1990s. While visiting the Cohens at their home in Washington, D.C., the septuagenarian couple got caught in a sudden snow storm. On exiting the National Gallery of Art late one afternoon, they discovered several inches of snow on the ground—and not a taxi in sight. Cell phones were yet to be widely available, and the couple was unable to reach their daughter or son-in-law. After navigating the Metro subway to the stop nearest Cohen’s home in suburban Washington, they still had some distance to travel but no available cabs.

Cohen recalled that his father-in-law surveyed the area around the Metro entrance and saw something “that brought a smile to his face, the steamy windows of a Domino’s pizza parlor. The couple entered the store, ordered a pizza for home delivery and said, ‘There’s one more thing—we’d like you to deliver us with it.’” The pizza-parlor caper ended soon after Cohen and his wife arrived home from work. “This pizza van drives up, out comes the pizza guy, my mother-in-law and my father-in-law with this large grin and a large cheese pizza.”

Cohen explained that this kind of resourcefulness, an example of pragmatic intelligence, can be empowering for older people. He said that even though an elder’s memory may not be as sharp as it once was, accumulated experience and a sense of mastery often enhances the ability of an older adult to ne-

gotiate new situations. More broadly, he said, modern science has shown that “it’s never too late to alter losing it by using it.”

LIKE CHOCOLATE

A former deputy director of the National Institute on Aging, Cohen said that in research published by scientists at Duke University in 2002, magnetic resonance images of participants’ brains revealed that as people progress through middle age, they no longer process different mental tasks largely with either the right or left hemisphere of their brains, but rather go into what he calls all-wheel drive. This finding and subsequent research, he said, have shown that older brains are not merely compensating for reduced capacity on one side or the other. “In my research, I would suggest that any activity that optimally uses both sides of the brain is like chocolate to the brain, the brain savors that activity.”

In his book *The Mature Mind: The Positive Power of the Aging Brain* (New York City: Basic Books, 2005), Cohen details his two-year study of 150 elders—averaging age 80—involved in weekly arts workshops in Brooklyn, N.Y., Washington, D.C., and San Francisco. After only one year, participants pursuing artistic endeavors—from visual arts to choral singing—not only demonstrated better scores on mental health measures than elders in a control group with no creative programming, but also were in better physical health than they were at the beginning of the study. They also scheduled fewer doctor visits and used reduced amounts of medications—an important consideration regarding future costs to Medicare under the Part D prescription drug benefit, Cohen said.

Cohen made it clear, though, that evidence in recent years showing growth in older brains that remain active reinforces the need for older adults to have more opportunities to engage in challenging tasks. Mounting research, he said, has shown that with continued activity, dendrites in the brain continue sprouting, essential glial cells keep forming, and related aspects of neurogenesis can “happen to the end.”

The session was sponsored by AARP as part of the Staying Sharp series of public forums about brain health. The Staying Sharp program is also supported by MetLife Foundation, the Dana Alliance and the National Retired Teachers Association. ❖