

RESEARCH PROGRESS UPDATE:

What's Good for the Heart is Good for the Brain



Breakthrough Research

Research funded by the American Heart Association found that diseases of the brain — especially Alzheimer's disease and dementia — are substantially increasing, and they are often associated with many of the same risk factors that cause heart disease, including high blood pressure, obesity, diabetes and tobacco use.



It's becoming more evident that reducing vascular disease risk factors can make a real difference in helping people live longer, healthier lives, free of heart disease and brain disease.

Mitchell S.V. Elkind, M.D. M.S., FAHA

Immediate past president of the American Heart Association, a professor of neurology and epidemiology at Columbia University Vagelos College of Physicians and Surgeons and attending neurologist at New York-Presbyterian/ Columbia University Irving Medical Center, New York, NY.

Background

Optimal brain health includes the functional ability to perform all the diverse tasks for which the brain is responsible, including movement, perception, learning and memory, communication, problem solving, judgment, decision making and emotion.

Cognitive decline and dementia are often seen following stroke and cerebrovascular disease and indicate a decline in brain health. Conversely, studies show maintaining good vascular health is associated with healthy aging and retained cognitive function.

The global death rate from Alzheimer's disease and other dementias is increasing considerably – even more than the rate of heart disease death:



The global death rates attributed to Alzheimer's disease and other dementias in the past ten years (44%) is **more than double** the increase in the death rates from heart disease (21%) during that same time.

Over the past 30 years (1990-2020), the global prevalence of Alzheimer's disease and other dementias has **increased by more than 144%** and deaths have **increased by more than 184%**.

By the Numbers

Having cardiovascular disease also increases the chances of developing brain disease:



People with midlife hypertension were five times more likely to experience impairment on global cognition and about twice as likely to experience reduced executive function, dementia and Alzheimer's disease.

Nearly half of all adults (47% or 121.5 million) in the U.S. have elevated blood pressure, based on 2015 to 2018 data.

Coronary heart disease was associated with a 40% increased risk of poor cognitive outcomes including dementia, cognitive impairment or cognitive decline.

There are also significant differences in the gender, race/ethnicity and socioeconomic status of people who are more likely to develop brain disease and dementia, an indication that social determinants of health also play a role:

More than twice as many women as men died from Alzheimer's disease and other dementias. Of the more than 54 million cases of Alzheimer's disease and other dementias worldwide in 2020, almost 20 million were among men, compared to nearly 35 million women.



Compared to white adults, other racial and ethnic groups were more likely to report worsening confusion or memory loss that contributed to not participating in everyday activities or difficulty with work, volunteer, and social activities outside of the home at least some of the time.

After adjustments for sex, age, education, income and comorbidities, Black adults were **one-and-a-half times** more likely and Hispanic adults were more than twice as likely than white adults to give up day-to-day household activities or chores because of confusion or memory loss.

Black adults were almost **three times** as likely and Hispanic adults were more than four times as likely to report needing assistance with everyday activities compared to white adults.

Why it Matters



This new chapter on brain health was a critical one to add. The data we've collected brings to light the strong correlations between heart health and brain health and makes it an easy story to tell – what's good for the heart is good for the brain.

Connie W. Tsao, M.D., M.P.H., FAHA

Chair of the Statistical Update writing group, assistant professor of medicine at Harvard Medical School and attending staff cardiologist at Beth Israel Deaconess Medical Center in Boston

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Advancing brain science through innovative research will help scientists shed new light on the causes and contributors to cognitive impairment and dementia, particularly as it relates to heart and vascular health. This is an important step in the Association's ongoing commitment to better understand how our brains age and how vascular health impacts brain health and overall well-being.

Additionally, it's critical that as a society and as individuals we understand and make the changes needed to improve health outcomes from brain disease and, more importantly, prevent them to begin with.

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Here's What's Next

Over the past several years, the American Heart Association has supported more than \$46 million in research funding focused on brain health.

In a \$43 million collaboration with The Paul G. Allen Frontiers Group, the Association is funding three projects that are now underway to find innovative ways to understand and improve brain health and cognitive impairment science.

A \$3.3 million grant in collaboration with global

philanthropist and technology visionary Bill Gates is committed to advancing the scientific evidence base related to brain health and dementia. The project supports a new brain health and dementia technology research center at Boston University.

Additionally, it will support the global exchange of research data to help scientists around the world collectively work in accelerating new discoveries related to heart and brain health, including the early detection and treatment of Alzheimer's disease and related dementias.