

Some blood pressure drugs may help protect against dementia, study shows

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A particular class of medication used to treat high blood pressure could protect older adults against memory decline and other impairments in cognitive function, according to a newly published study from Wake Forest University School of Medicine.

Research suggests that some of the drugs classified as angiotensin-converting enzyme (ACE) inhibitors, specifically those types of ACE inhibitors that affect the brain by crossing the blood-brain barrier, may reduce inflammation that could contribute to the development of Alzheimer's disease, a major cause of [dementia](#).

The study appears in the current issue of [Archives of Internal Medicine](#).

"[High blood pressure](#) is an important risk factor for Alzheimer's disease and [vascular dementia](#)," said Kaycee Sink, M.D., M.A.S., lead author of the study, geriatrician and an assistant professor of internal medicine - gerontology. "Our study found that all blood pressure medications may not be equal when it comes to reducing the risk of dementia in patients with hypertension."

Dementia is the broad term used to describe conditions in the brain that cause loss of [brain function](#). There are several different causes of dementia, but Alzheimer's disease and strokes are two of the most common. People with dementia begin to lose their memory and may not be able to think well enough to do normal activities, such as getting dressed or eating, may lose their ability to solve problems or control their

emotions, may experience personality changes and/or may become agitated or see things that are not there.

While memory loss is the hallmark of dementia, it does not, by itself, mean an individual has dementia. People with dementia have serious problems with two or more brain functions, such as memory and problem solving.

Someone is diagnosed with dementia every 70 seconds. It is estimated that the number of people in the United States living with dementia will increase to about 13 million by the year 2050. Therefore, delaying the onset of dementia, even by one year, would have a substantial impact on public health.

Hypertension, or high blood pressure, is a major contributor to the development of all types of dementia. Many of the estimated one in three U.S. adults who have hypertension are treated with ACE inhibitors, a class of drugs that help lower blood pressure by causing the blood vessels to relax and widen.

Some ACE inhibitors are known as "centrally-acting" because they can cross the blood-brain barrier, a specialized system of tiny blood vessels that protects the brain from harmful substances in the blood stream. Centrally-acting ACE inhibitors include captopril (Capoten®), fosinopril (Monopril®), lisinopril (Prinivil® or Zestri®), perindopril (Aceaon®), ramipril (Altace®) andtrandolapril (Mavik®).

For the study, researchers analyzed data from the Cardiovascular Health Study, a long-term study of cardiovascular risk factors that involved 5,888 people over 65 years old from Forsyth County, N.C.; Sacramento County, Calif.; Pittsburgh, Pa.; and Washington County, Md.

The investigators specifically looked at 1,074 study participants who

were free of dementia when they entered the study and who were being treated for hypertension. They evaluated whether exposure to ACE inhibitors in general - and to the centrally-active versus non-centrally active drugs - was related to dementia development and cognitive decline.

Compared to other classes of anti-hypertensive drugs, researchers found no association between exposure to ACE inhibitors as a class and the risk of dementia. There was a significant cognitive benefit, however, seen in those individuals treated with the centrally-active ACE inhibitors specifically.

The study found an association between taking centrally-active ACE inhibitors and lower rates of mental decline as measured by the Modified Mini-Mental State Exam, a test that evaluates memory, language, abstract reasoning and other cognitive functions. The research showed that participants who were exposed to ACE inhibitors that cross the blood-brain barrier saw an average 65 percent less cognitive decline per year of exposure compared to participants taking other blood pressure medications.

Researchers also found that non-centrally active ACE inhibitors were associated with an increased risk of dementia and the people taking them were more likely to develop difficulty performing daily activities. Specifically, participants who, for three years, took ACE inhibitors that do not cross the blood-brain barrier were at a 73 percent greater risk of developing dementia than were the individuals taking other anti-hypertensive drugs.

"ACE inhibitors have been shown to be beneficial to the heart and kidneys, and this study gives evidence that they may also be beneficial to the brain—at least the ones that are able to get into the brain," Sink said. "We already know it is important to treat high blood pressure and keep it

under good control. But our study finds that some [blood pressure](#) medications, such as the [ACE inhibitors](#) that cross the blood brain barrier, may offer benefits to the brain that others do not. If a patient has an indication for an ACE inhibitor, it makes sense to choose one that crosses the blood brain barrier. This is quite different from the typical recommendations for physicians to avoid medications in older adults that get into the brain."

Source: Wake Forest University Baptist Medical Center ([news](#) : [web](#))

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