Cognitive impairment after stroke is common, and early diagnosis and treatment needed

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More than half of stroke survivors may develop cognitive impairment within a year after their stroke, and 1 in 3 are at risk for developing

dementia within 5 years, according to a new American Heart Association scientific statement published today in *Stroke*, the peer-reviewed scientific journal of the American Stroke Association, a division of the American Heart Association.

An American Heart Association scientific statement is an expert analysis of current research and may inform future guidelines. This new statement, "Cognitive Impairment After Ischemic and Hemorrhagic Stroke," advises post-stroke screenings and comprehensive interdisciplinary care to support stroke survivors with cognitive impairment.

"Cognitive impairment is an often under-reported and under-diagnosed—yet very common condition that stroke survivors frequently deal with," said Nada El Husseini, M.D., M.H.Sc., FAHA, chair of the scientific statement writing committee and an associate professor of neurology at Duke University Medical Center in Durham, North Carolina. "Stroke survivors should be systematically evaluated for cognitive impairment so that treatment may begin as soon as possible after signs appear."

According to the American Heart Association's 2023 Statistical Update, an estimated 9.4 million American adults report having had a stroke—that's about 3.6% of the U.S. adult population. Cognitive impairment may develop early after a stroke or years later.

"Cognitive impairment after stroke ranges from mild impairment to dementia and may affect many aspects of life, such as remembering, thinking, planning, language and attention, as well as a person's ability to work, drive or live independently," El Husseini said.

This scientific statement refers to cognitive impairment after a stroke. Ischemic strokes, which are caused by a blockage in a blood vessel

supplying blood to the brain, account for 87% of all strokes. Hemorrhagic strokes are brain bleeds that occur when a weakened blood vessel ruptures and account for about 13% of all strokes.

According to the statement:

- Cognitive impairment after stroke is common in the first year after a stroke, occurring in up to 60% of stroke survivors. It is most common within the first two weeks after a stroke.
- About 40% of people who survive a stroke have cognitive impairment during the first year after the stroke that does not meet diagnostic criteria for dementia, yet it still impacts their quality of life.
- Up to 20% of stroke survivors who experience mild cognitive impairment fully recover cognitive function, and cognitive recovery is most likely within the first 6 months after a stroke.

- Post-stroke cognitive impairment is often associated with other conditions, including physical disability, sleep disorders, behavioral and personality changes, depression and other neuropsychological changes—each of which may contribute to lower quality of life.

Diagnosing and managing cognitive impairment after stroke

There is no gold standard for cognitive screening after a stroke, according to the scientific statement. However, some brief screening tests (30 minutes or less) are widely used to identify cognitive impairment after a stroke: The Mini-Mental State Examination and the Montreal Cognitive Assessment.

While early detection during the initial hospitalization for stroke is important for immediate care planning, it's also important to assess cognitive changes over time. Stroke survivors who experience unexplained difficulties with cognitive-related activities of daily living, following care instructions or providing a reliable health history may be candidates for additional cognitive screening. When cognitive impairment is detected, health care professionals are encouraged to assess an individual's daily functioning with neuropsychological screenings, which evaluate areas of brain function that affect behavior and may provide a more thorough picture of the individual's cognitive strengths and weaknesses.

Health care professionals are encouraged to offer guidance to patients and their caregivers regarding home safety, returning to work and driving after a stroke, and connect caregivers and stroke survivors to community resources for social support.

Interdisciplinary collaboration among health care professionals, such as physicians, speech language therapists, occupational therapists, neuropsychologists and nurses, is often needed for optimal monitoring and care for people with cognitive impairment after a stroke. In addition, the statement suggests behavioral cognitive rehabilitation and physical activity may help improve cognition after a stroke.

Preventing another stroke is a key consideration to prevent the worsening of cognitive impairment after a stroke. This includes treatments for stroke risk factors, such as high blood pressure, high cholesterol, Type 2 diabetes and atrial fibrillation. Blood pressure control is associated with reduced risk for recurrent stroke and for mild cognitive impairment.

Future research needs

There are unanswered questions regarding how cognitive impairment develops after stroke, and the impact of non-brain factors, including infection, frailty and social factors. Further research is needed to determine best practices for cognitive screening after a stroke, including the development and use of screening instruments that consider demographic, cultural and linguistic factors in determining "normal" function.

"Perhaps the most pressing need, however, is the development of effective and culturally relevant treatments for post-stroke cognitive impairment," El Husseini said. "We hope to see big enough clinical trials that assess various techniques, medications and lifestyle changes in diverse groups of patients that may help improve cognitive function."

This scientific statement was prepared by the volunteer writing group on behalf of the American Heart Association's Stroke Council, the Council on Cardiovascular Radiology and Intervention, the Council on Hypertension and the Council on Lifestyle and Cardiometabolic Health. American Heart Association scientific statements promote greater awareness about cardiovascular diseases and stroke issues and help facilitate informed health care decisions. Scientific statements outline what is currently known about a topic and what areas need additional research. While scientific statements inform the development of guidelines, they do not make treatment recommendations. American Heart Association guidelines provide the Association's official clinical practice recommendations.

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