

Cardiovascular Health Found to Affect Cognitive Function

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Neuropsychologist Dr. Kenneth Freundlich with Morris Psychological Group Provides Tips for Patients and Families



(HealthNewsDigest.com) - Parsippany, NJ, September 2014 - As medical intervention and treatment have improved and as people have become more conscientious about lifestyle factors that improve heart health, deaths from heart disease have declined. According to the American Heart Association, death rates attributable to cardiovascular disease dropped 31% from 2000 to 2010.* Nevertheless, the prevalence of heart disease and its risk factors continue to present a serious health challenge for Americans. This is particularly true for the elderly, significant majorities of whom have some manifestation of heart disease. One side effect that is just beginning to be understood is that heart disease has consequences for thinking and communication. "The risk of premature death from heart disease has been dramatically reduced," says neuropsychologist Dr. Kenneth Freundlich of Morris Psychological Group. "As a result, more people are living longer and managing heart disease in its many forms. For some of them, however, that means managing cognitive impairment as well."

Cardiovascular disease comprises a wide range of conditions that affect the heart and circulatory system. One or more of the most common -- heart attack, stroke, angina, heart failure and high blood pressure - are present in more than 1 in 3 adults (83.6 million Americans) and about half of them (42.2 million) are over the age of 60.* With the elderly constituting an increasing segment of the population and with the prevalence among them of both cardiac disease and cognitive impairment, there has been growing interest in examining the relationship between the two. Studies have confirmed that people with cardiovascular conditions have higher rates of cognitive dysfunction than their healthy peers and there is growing understanding of the physiological mechanisms responsible.

What is the connection between cardiovascular disease and cognition?

The heart and the brain are inextricably linked. Problems in the heart and circulatory system can cause chemical, electrical and structural changes in the brain. For example, heart failure, which is characterized by the inability of the heart to pump effectively, causes blood flow to the brain to be reduced. Without an adequate supply of oxygen and nutrients, brain cells die, usually those in the cortex, the area associated with learning, memory and language. The resulting cognitive deficits may be mild and may be reversed if the heart failure is effectively treated. But if the heart continues to weaken, the mental impairment may become more severe and may progress to vascular dementia, the second most common dementia after Alzheimer's disease, which is most

often caused by a stroke. A type of vascular dementia known as multi-infarct dementia is caused by a series of mini-strokes, also called transient ischemic attacks (TIAs) that may go undetected but cause damage that adds up over time. "Stroke and vascular dementia are among the leading causes of cognitive dysfunction in the elderly," says Dr. Freundlich. "But we now know that people with chronic heart conditions often suffer deficits in cognition well in advance of the occurrence of stroke or the diagnosis of dementia."

What are the cognitive changes associated with cardiovascular disease?

The functional consequences of changes in the brain may be problems in attention and processing speed; memory, including verbal recall and learning efficiency; and executive function, which includes planning, reasoning and inhibition. "Basic cognition and language are typically unaffected by cardiovascular disease," says Dr. Freundlich. "It is higher-level cognitive functioning that is more likely to be impaired." Examples include attention switching, the ability to follow multi-step instructions, decision-making, and comprehension of complex or implied information. Recognition memory - the ability to remember and recognize familiar people or objects - which typically declines in people with Alzheimer's, seems not to be significantly affected by the brain changes associated with heart disease.

What can be done to manage cardiac-related cognitive impairment?

Cognitive impairment has important consequences for daily functioning and quality of life. It can also bear directly on management of the underlying cardiac condition since it may interfere with a patient's ability to comply with the treatment regimen or to recognize aggravated symptoms. Patients, their families and their physicians must be alert to the risk of cognitive decline and should consider the need for a neuropsychological evaluation that goes beyond basic screening to assess higher-level cognitive and linguistic abilities. The evaluation might include observation and interviews as well as structured tests. As a result, a therapeutic plan can be developed that optimizes outcomes for both cardiac and cognitive dysfunction.

"Preventing heart disease is the first priority," Dr. Freundlich emphasizes. A study in the Netherlands found that even just having risk factors for heart disease is correlated with a decline in brain function in adults as young as 35.** The higher the risk profile for heart disease, the more serious the cognitive decline. "These findings reinforce the importance of managing lifestyle factors like smoking and obesity," says Dr. Freundlich. "Doing so may reduce the risk not only of stroke and heart disease but of cognitive dysfunction as well."

American Heart Association, Heart Disease and Stroke Statistics, 2014 Update

**American Heart Association Newsroom <http://newsroom.heart.org/news/increases-in-heart-disease-risk-factors-may-decrease-brain-function>

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