November honors National Alzheimer’s Disease Awareness Month, a disease that affects millions each year. We talked with Oscar Lopez, M.D., director of the Alzheimer Disease Research Center at the University of Pittsburgh, to learn more about Alzheimer’s disease.

Q. WHAT CAUSES ALZHEIMER’S DISEASE?
A. Aging is the greatest known risk factor for developing Alzheimer’s disease (AD). Scientists do not yet fully understand what causes it. In a very rare form of early-onset Alzheimer’s (symptoms starting in the 40s and 50s), a single genetic mutation is almost always the cause. Late-onset Alzheimer’s, which is far more common, is due to a complex series of brain changes that occur over decades before memory and other cognitive problems appear. During this early time frame, people seem to be symptom-free, but toxic changes are taking place in the brain. The overall causes of Alzheimer’s are believed to include a combination of genetic, environmental and lifestyle factors. Right now, there is a great deal of interest in the relationship between cognitive decline and vascular conditions such as heart disease, stroke, and high blood pressure, as well as metabolic conditions such as diabetes and obesity. Ongoing research will help us understand how reducing risk factors for these conditions might also reduce the risk of Alzheimer’s.

Q. WHAT TREATMENTS ARE CURRENTLY AVAILABLE FOR ALZHEIMER’S?
A. Currently there is no cure for Alzheimer’s disease and there is no single drug or other intervention that can successfully treat it. Current medications help people maintain mental function, manage behavioral symptoms, and slow or delay the symptoms of disease. There are currently several medications approved by the U.S. Food and Drug Administration to treat the symptoms of Alzheimer’s. These drugs work by regulating neurotransmitters, which are the chemicals that transmit messages between neurons. They might help maintain thinking, memory, and communication skills, and help with certain behavioral problems. However, these drugs do not change the underlying disease process. It is important to know that since 2003, we have not had any new treatment for Alzheimer’s disease.

Q. WHAT IS THE CURRENT RESEARCH INTO UNDERSTANDING THIS DISEASE AND DEVELOPING NOVEL THERAPIES?
A. Alzheimer’s disease research has developed to a point where we can look beyond treating symptoms and think about addressing the underlying disease processes. The Alzheimer Disease Research Center (ADRC) at the University of Pittsburgh is one of the nation’s leading research centers specializing in the diagnosis of Alzheimer’s and related disorders. The ADRC has supported more than 30 research projects investigating various aspects of Alzheimer’s disease. Research ranges from genetic and biochemical studies to investigations of behavioral changes and the burden placed on care...
The ADRC is conducting multiple industry and federally funded clinical trials using symptomatic and disease-modifying treatments. The majority of the trials are oriented to reduce the deposits of a protein called beta-amyloid in the brain, which plays a central role in the development of the disease. These are called disease-modifying treatments because they can alter the underlying biology of the disease. In addition, the ADRC is participating in one of the largest prevention trials in the country called A4. This study is funded by Lilly and the NIA and consists of the use of anti-amyloid therapy in individuals who are cognitively normal, but who have amyloid deposits in the brain. In addition, research is under way to develop a test that may predict or diagnose the disease definitively. Researchers hope to identify a blood-based biomarker of Alzheimer’s that may lead to blood tests in the future to diagnose the disease at its earliest stage and better track its progression.

The ADRC is in constant need of participants for several research studies and invites anyone with interest to call the Alzheimer Disease Research Center at 412.692.2721 or email oakleym@upmc.edu.

Q. WHAT CAN PEOPLE DO TO REDUCE THEIR RISK OF DEVELOPING ALZHEIMER’S?

A nutritious diet, physical activity, social engagement, and mentally stimulating pursuits have all been associated with helping people stay healthy as they age. These factors may also help reduce the risk of cognitive decline and Alzheimer’s disease. In fact, a study authored by researchers from the University of Pittsburgh showed that cognitively normal individuals who walked more than 72 blocks per week had a larger brain volumes than those who walked less, and over a five-year followup period had a decreased risk of developing dementia. These results showed a direct connection between exercise and delaying cognitive impairment. As current treatments for Alzheimer’s disease are limited and only address the symptoms, identifying innovative prevention strategies, such as regular exercise regimens, will be paramount.

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