Alzheimer’s disease (AD) is a major public health problem that affects more than 170,000 North Carolinians, resulting in increased disability and significant burdens upon caregivers. In addition to the enormous toll AD takes on its victims and their families, it is also extremely expensive: care for AD patients is often significantly more costly than for patients without the disease. Although there are drugs that can treat some of the symptoms of Alzheimer’s, there are currently no therapies that can reverse, stop, or even slow the progression of AD\(^1\), and the causes of the illness are still not entirely clear. However, scientific evidence suggests that a complex combination of interactions between exposure to environmental factors and a person’s genetic predisposition—in other words, an increased risk of having a disease or condition because of one’s genes—can trigger a series of events that results in the death of brain cells. This loss of brain cells leads in turn to cognitive impairment that becomes increasingly severe as the disease progresses.

Researchers from Duke University’s Joseph and Kathleen Bryan Alzheimer’s Disease Research Center (Bryan ADRC) and the Deane Drug Discovery Institute (DDDI), together with the Duke Translational Medicine Institute (DTMI)–MURDOCK Study, have launched a long-term AD prevention initiative in Kannapolis. This new primary prevention study, the Opportunity to Prevent Alzheimer’s disease (OPAL) trial, will include cognitive screening in the first quarter of 2011 for all MURDOCK registry participants aged 55 years and older.

The goal of the OPAL study is to translate the basic scientific research being done at the Bryan ADRC and the DDDI into improved patient care by using the information stored in the MURDOCK Study registry. The study will also take advantage of lab facilities available at the DTMI and the North Carolina Research Campus (NCRC) in Kannapolis.

According to lead researcher Dr. Kathleen A. Welsh-Bohmer, this multi-institutional initiative in AD prevention and discovery “…will allow us to focus on preventing the onset of Alzheimer’s disease. The mix of scientific expertise and the cutting-edge resources available at Kannapolis has the potential to radically change the game in Alzheimer’s research.”

\(^1\)http://www.nia.nih.gov/Alzheimers/AlzheimersInformation/Treatment/
Welsh-Bohmer, a professor of psychiatry at Duke and director of the Bryan ADRC, is the principal investigator for the OPAL trial. She and co-investigator Dr. Allen D. Roses, a professor of neurobiology at Duke and director of the DDDI, plan to apply what they have learned about AD from both laboratory studies in animals and larger population-based studies in humans as they work to identify biomarkers for AD.

Known risk factors for AD include advanced age, a family history of the disease, and the presence of several gene variants, including one known as APOE e4. Environmental factors, however, are less well-understood. Research from the Bryan ADRC and the DDDI suggests that lower body mass, physical activity, and a diet rich in fruits and vegetables may possibly delay the onset of clinical symptoms of AD and slow disease progression.

"Understanding the underlying events that take place on a cellular level, and developing effective treatments that can prevent or delay the onset of Alzheimer’s symptoms in the brain, are both critical to reducing the impact of this disease,” said Welsh-Bohmer.

The OPAL trial is a good fit for the MURDOCK Study: in addition to collecting detailed personal health, demographic, and lifestyle data as well as vital signs and blood and urine samples, OPAL will add performance measures of brain function for persons 55 years and older who participate in the MURDOCK Study. Early detection is crucial in AD research, but because the initial symptoms of AD may be difficult to distinguish from other causes, diagnosis is often delayed until severe functional or behavioral changes including dementia appear.

As part of the launch of the OPAL study, a Bryan ADCR office will be located in the MURDOCK Study-Kannapolis office to oversee the cognitive screening of participants who enroll in the registry. Clinical and research personnel from the Bryan ADRC who are trained in the assessment and diagnosis of neurological disorders will oversee MURDOCK staff and help provide referrals for participants who show signs of cognitive disorders.

If someone you know is interested in joining the MURDOCK Study and would like to participate in the OPAL project, please ask them to contact the MURDOCK Study office by phone 704-250-5861 or by email murdock-study@duke.edu

A Call for Community Outreach
Help us identify local community organizations that might be interested in learning about the MURDOCK Study!

The MURDOCK Study team has worked with more than 175 community organizations, schools, places of worship, homeowners’ associations, gyms, and local government offices. The following list represents a brief snapshot of a few of these organizations:

- Cabarrus County and Kannapolis City Schools and Senior Centers
- Futbol Club Carolina Alliance
- Habitat for Humanity
- Kannapolis Rotary
- West Cabarrus YMCA

Please call Virginia ("Jennie") Bridges at 704-250-5854 or send an email to her at virginia.bridges@duke.edu to add a community organization to our list. Thank you!