

Psychological tests to help doctors predict dementia accurately

Toronto, ON (January 6, 2011) – Two neuropsychological tests have been shown to accurately predict dementia of all causes, in patients up to 10 years in advance of its diagnosis, says a new study.

“This will be helpful for clinicians concerned about the risk of progression to dementia in patients who may be healthy or present with a variety of medical and neurological conditions such as stroke,” says Dr. Mary Tierney, principal investigator of a new study and director of the Geriatric Research Unit at Sunnybrook Health Sciences Centre. “Enhancing the long-term prediction of dementia could have important implications for clinicians who are concerned about whether their aging patients will progress to dementia or remain dementia free within a 5 or 10 year period, and offer a route to early detection of cognitive decline. This may also help us to identify patients early on who may benefit from clinical trials or treatments as they become available, as well as researching the longer term effects of the disease so we can better understand its progression in the brain and how best to approach it.”

The two tests that accurately predicted dementia within 10 years of diagnosis were a test of word recall memory after a short delay and a test requiring the participant to match digits and symbols. These tests require specialized training to properly administer and interpret.

The study is being published in the upcoming issue of the Journal of Alzheimer’s Disease.

A group of 1472 non-demented participants carefully selected from each of the 10 Canadian provinces, were tested in 1991 and received a diagnostic assessment for dementia ten years later in 2001. The results showed that for every additional word recalled on the memory test, there was an 18 per cent decrease in the risk of developing dementia within 10 years and for every additional symbol provided in the digit symbol test, there was a 5% decrease in the risk of developing dementia.

Another group of 1231 non-demented Canadian participants completed testing in 1996 and received a diagnostic assessment five years later in 2001. In addition to the test of word recall and the digit symbol test, two other tests improved accuracy of diagnosis within five years of diagnosis; these were a test of long-term memory and the ability to name items from a category.

Several of the tests had previously been identified for the early prediction of Alzheimer’s disease by Dr. Tierney and her colleagues, including the tests of word recall, category names and long-term memory, but these new results indicate that a test of matching digits and symbols is an important predictor of dementia due to all causes, not just Alzheimer’s disease. The digit symbol test measures sustained attention and the ability to change mental set, which are thought to reflect functioning of the frontal lobes of the brain. Thus a combination of tests which

measure functioning of both the temporal and frontal lobes of the brain appear to be important for accurate prediction of all cause dementia.

According to the Alzheimer Society of Canada, half a million Canadians currently have AD or a related dementia, and this year alone, more than 103,000 Canadians will develop dementia. If nothing changes, the number of people living with AD or a related dementia is expected to more than double, reaching 1.1 million Canadians within 25 years. (Alzheimer Society of Canada)

Thus efforts such as those in this Canada-wide study must be made to identify AD and related causes of dementia as early in the disease process so that appropriate care and treatments can be provided as soon as possible. Early identification of dementia risk also allows individuals to be included in clinical trials before disease diagnosis.

About Sunnybrook

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Sunnybrook specializes in caring for Canada's war veterans, high-risk pregnancies, critically-ill newborns, adults and the elderly, and treating and preventing cancer, cardiovascular disease, neurological and psychiatric disorders, orthopaedic and arthritic conditions and traumatic injuries. For more information about how Sunnybrook is inventing the future of health care please visit us online at www.sunnybrook.ca

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