Test to predict dementia risk

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(Medical Xpress) -- Researchers have developed a memory stress test that can be used to predict those at risk of developing dementia.

Researchers from the Queensland Institute of Medical Research (QIMR), together with collaborators from the Brain and Ageing Research Program at the University of New South Wales, have shown for the first time that the brain's response to increasing mental stress can predict a future decline in everyday functioning.

"This is an exciting finding," said Professor Michael Breakspear, Coordinator of QIMR's Mental Health and Complex Disorders program.

"Accurate detection of those at risk before they show clinical signs of dementia would allow for early, targeted preventive interventions. The ability to perform everyday functions is the key skill that allows people to stay at home with their families, hence limiting the distress and financial burden of dementia. With an ageing population and 981,000 Australians expected to be living with dementia by 2050, this finding has enormous public health implications.

"We studied Australians aged between 70 and 85 with mild cognitive impairment, which is a known risk factor for dementia. They were given a series of memory tasks of increasing difficulty and their brain activity was monitored - think of a heart stress test but instead of running on a treadmill we make you think to the point of mental exhaustion and measure your brain activity.

"By using a brain imaging scanner, we were able to detect subtle changes in brain activity. We studied the patients again after two years and found that their initial response to the stress test predicted whether their everyday functioning was stable or declined.

"What is also interesting is we found that the level of accuracy when the brain is under stress is also a good indicator of future mental decline. Interestingly, other potential indices such as age, years of education, brain volume and their general cogntive function, did not predict outcome."

Researchers hope to expand their research by studying larger groups of people, monitoring those involved for longer periods of time and using genetic information.

"Ultimately we hope our research may lead to a clinical tool to identify those at risk. This would allow early intervention, better targeting of the available medications and hence improve the lives of those living with this terrible condition," said Professor Breakspear.

Provided by Queensland Institute of Medical Research

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