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Now use online test to predict onset of Alzheimer's

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Singapore: The early onset of Alzheimer's disease could be detected using a simple online test, according to scientists from the Queensland Brain Institute (QBI) at the University of Queensland (UQ). Study coordinator Professor Lizzie Coulson said that her research team at QBI had identified how Alzheimer's disease impairs the cholinergic basal forebrain in undertaking navigational tasks. The researchers examined the cognitive changes in rodent models with basal forebrain degeneration mimicking Alzheimer's disease.

The research paper titled, 'Lesions of the basal forebrain cholinergic system in mice disrupt idiothetic navigation', was published in the journal PlosOne. The study was funded by the Queensland Government NIRAP (National and International Research Alliances Program) and the National Health and Medical Research Council of Australia. Professor Coulson, in collaboration with a team from the Czech Republic who developed the human recall navigation tasks, are currently validating the findings in humans. Professor Coulson says the diagnosis tool could be widely used as early as 2015.

Professor Coulson said that, "One of the areas known to degenerate in Alzheimer's disease is a region called as the cholinergic basal forebrain, implicated in memory and attention. It has been unclear whether loss of function in this brain area causes the cognitive changes seen early in Alzheimer's disease. Surprisingly, the mice behaved normally on most of the cognitive tests. However on a recall navigation task akin to 'dead reckoning', the mice become disorientated."

Professor Coulson said this demonstrated that recall navigation tasks relied heavily on cholinergic neurons, which were known to deteriorate early in Alzheimer's patients.

She added, "By asking patients to perform these navigation tasks, doctors may be able to detect symptoms of Alzheimer's disease much sooner and more cheaply than the MRI tests. We envision this test could also help to identify patients who would benefit from early administration of current Alzheimer's disease treatments."