

## Test for early Alzheimer's in late development

May 27 2009, By LINDA A. JOHNSON , AP Business Writer

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(AP) -- A research institute devoted to Alzheimer's and related diseases has teamed up with a major maker of diagnostic tests to speed development of what could be the first test to detect Alzheimer's in its early stages.

If all goes well, the first commercial version of the test could be available in 12 to 18 months, possibly enabling patients to try to slow progression of the increasingly common disease, said Dr. Daniel Alkon, scientific director of the Blanchette Rockefeller Neurosciences Institute.

"This may be a way of monitoring how effective a treatment is for [Alzheimer's disease](#)" as well, through periodic retesting once scientists can develop a medicine to stop the mind-robbing disease, Alkon told The Associated Press in an exclusive interview Tuesday.

Alkon's institute, based at West Virginia University and affiliated with Johns Hopkins University, on Wednesday was to announce a multimillion-dollar contract with Inverness Medical Innovations Inc. of Waltham, Mass. Inverness will fund development of the Alzheimer's test and future improvements, including an eventual home version, for at least three years.

The test works by detecting abnormal function of a protein that has been shown to be involved in memory storage, Alkon said.

First, a small sample of cells is removed from a patient's skin at a

doctor's office or testing center and shipped to the institute. There, scientists grow the [skin cells](#) in a glass dish and add a substance to stimulate an enzyme called PKC to make the protein combine with the element phosphorous inside the skin cells. If too much phosphorous ends up in the combination, then the patient has Alzheimer's, Alkon said.

So far, the test has been tried on more than 300 patients at 15 hospitals, including 42 for whom the Alzheimer's diagnosis was later confirmed by an [autopsy](#) showing the disease's signature pattern of [brain damage](#) - the only definitive way to diagnose it.

The test was 98 percent accurate on the autopsied patients. But of those, only 11 had early Alzheimer's, as very few people die within three or four years of the disease starting. Alkon hopes to test thousands more patients before his [diagnostic test](#) is marketed.

Dr. Ralph Nixon, vice chairman of the Alzheimer's Association's medical and scientific advisory council, said the institute's test needs more evaluation, particularly among patients with early symptoms, to determine its accuracy. Researchers elsewhere also need to be able to duplicate the results.

"I think it's a potentially promising direction ... that has some basis in the science of Alzheimer's disease," said Nixon, a professor of psychiatry and cell biology at New York University School of Medicine.

Currently, diagnosis of early Alzheimer's often is wrong, because it's based on evaluating a patient's behavior and trying to rule out other causes for symptoms such as forgetfulness.

Nixon said early diagnosis would help patients plan their future and even take steps to slow the disease, such as improving their diet and getting more "mental exercise" or getting into a clinical study of one of the

many promising experimental drugs.

Alkon said his group's test might be particularly helpful for people with a family history of Alzheimer's worried about their risk.

"It's not invasive," he said, an advantage over tests in development that require painful removal of cerebrospinal fluid. He said the test would only cost a few hundred dollars, making it much cheaper than advanced brain imaging, which can show a pattern of plaque buildup in the brain that indicates a person might eventually develop Alzheimer's.

Meanwhile, the institute just got U.S. approval to start its first small test in Alzheimer's patients of what might turn out to be a treatment, what Alkon describes as an "incredibly potent" natural substance that activates the PKC enzyme.

"It's not unreasonable," Nixon said, but it's too early to tell whether that approach would work.

Inverness makes the Home Check consumer test for abuse of illegal and prescription drugs, plus tests for doctors and hospitals to determine pregnancy, fertility, cholesterol levels and early stage bladder cancer.

The institute was founded by West Virginia Sen. Jay Rockefeller in memory of his mother, Blanchette Hooker Rockefeller, who died of Alzheimer's disease.

More than 5 million Americans have Alzheimer's disease, a number growing steadily as the population ages.

Early symptoms such as trouble recalling recent events or where keys are worsen to being unable to recognize loved ones, losing all sense of time and place, wandering and physical aggression.

Alzheimer's is one of the hottest areas of research in the pharmaceutical and biotechnology industries, with companies trying to develop treatments that would actually stop or reverse the course of the disease.

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On the Net:

Alzheimer's Association tips: <http://www.alz.org/alzheimers-disease-10-signs-of-alzheimers.asp>

Ways to reduce risk:

<http://www.alz.org/we-can-help-brain-health-maintain-your-brain.asp>

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