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**Global Program on Alzheimer's Stem Cells to Accelerate Discovery of  
Causes and Cures for the Most Common Dementia:  
Effort Described as the Search for 'Alzheimer's Holy Grail'**

Washington—Uncovering the cure for Alzheimer's disease at a rate never before possible and giving individuals a way to better understand their chances of facing Alzheimer's are the outcomes of new advances in stem cell research from the Cure Alzheimer's Fund (CAF) Stem Cell Research Consortium that use skin samples to identify potential therapies for the disease.

"Reprogramming" skin cells into brain cells using stem cell technology, researchers now can obtain and monitor healthy adult brain cells that are interacting with potential cure drugs for Alzheimer's in a dish, better known as a "disease dish," within minutes or hours, compared with previous testing methods, which required nine months to one year for results.

"Normally it is impossible to obtain and maintain healthy adult nerve cells in a dish, but this technology has changed that," said Tim Armour, president and CEO of CAF. "The 'disease dish' method allows us to test potential therapies much more quickly and accurately than in current mouse models. Reducing the time from days or weeks to minutes or hours means that a candidate drug that has no effect can be seen almost immediately and discarded, or at least put at the end of the line."

This breakthrough method also allows researchers to do what has never been possible before —directly interact and investigate mature brain cells that are identical to the brain cells of donors with common "sporadic" forms of Alzheimer's. Results are specific to the patient's genetic makeup, allowing researchers to uncover Alzheimer's-related changes at an individual level and to track changes that might otherwise go undiscovered.

"This approach is one of our best shots at understanding common forms of Alzheimer's and, once defects are identified, we can use these same brain cells to screen for new drugs," said Sam Gandy, M.D., Ph.D., the head of the Cure Alzheimer's Fund Stem Cell Research Consortium. "It's a huge breakthrough."

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The consortium has a handful of other aims, including identifying similarities between forms of the disease and analyzing the changes Alzheimer's disease makes to the brain.

"We can now ask molecular questions about brain cells from patients who have common forms of Alzheimer's. We also can study brain cells from patients at high genetic risk for Alzheimer's but who somehow escape the disease, to identify what networks prevented them from getting Alzheimer's disease," Gandy said. "We have a reasonable knowledge about high risk factors but almost no understanding of protective factors. These brain cells will enable us to get at that side of the issue as well."

To encourage international collaboration in Alzheimer's treatment, consortium researchers will create a stem cell bank that can be accessed globally to quicken drug screening worldwide.

Made up of researchers from domestic and international institutes, CAF's Stem Cell Research Consortium is dedicated to finding a cure for Alzheimer's using advances in stem cell technology. Participating institutions and members include:

- Hadassah University Medical Center: Tamir Ben-Hur, M.D., Ph.D.
- Harvard Medical School and Massachusetts General Hospital: Doo Yeon Kim, Ph.D.
- Harvard University Stem Cell Institute: Kevin Eggan, Ph.D.
- Icahn School of Medicine at Mount Sinai: Sam Gandy, M.D., Ph.D.
- New York Stem Cell Foundation: Scott Noggle, Ph.D.

Also joining the consortium is Marc Tessier-Lavigne, Ph.D., president of The Rockefeller University, who is pursuing related research separately funded by CAF.

In just seven years, with just \$20 million spent, CAF has an unparalleled track record. CAF focuses the best scientific minds in the industry scrupulously and without any financial gain for its founders, donors or researchers.

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