

Nun Study returns to Minnesota, where scientists plan to research Alzheimer's, dementia

March 25 2009, By Maura Lerner

Last fall, scientists from the University of Minnesota returned from Kentucky with some 600 preserved brains and 439 boxes filled with memories. That's how the world-famous Nun Study of Alzheimer's disease came home to Minnesota, where it first began.

Dr. Kelvin Lim, the project's new lead scientist, knew it was a historic moment. But for him, nothing compared with meeting the nuns who are still alive. Now in their 90s or older, they've been part of this unique research project for more than 20 years. And even as their numbers have dwindled, he discovered, their commitment has not. As one sister recently told him: "This allows me an opportunity to teach even after I die."

Over the past two decades, the landmark study has led to a best-selling book, "Aging with Grace," and several important research findings: that those with well-developed [language skills](#) early in life were less likely to develop [dementia](#) later on, and that those with optimistic outlooks lived longer.

On Wednesday, the University of Minnesota is formally announcing the project's return from the University of Kentucky, where it wound up when the previous director took a new job, and a plan to breathe new life into the study with a sequel -- "Nun Study II" -- to study a fresh wave of recruits.

In a sense, the study has come full circle since it began, in 1986, with volunteers from a religious order in Mankato, the School [Sisters of Notre Dame](#). Since then, it has made headlines around the world with insights on how lifestyle and personality traits are linked to people's risk of dementia.

"It's always been their mission to teach," Lim said of the Sisters of Notre Dame. "They view this science, and their contribution to science, as another way to teach others about aging, about dementia, about life."

Originally, more than 600 [elderly nuns](#) from across the country volunteered to let a former University of Minnesota scientist, Dr. David Snowdon, study them for clues to how aging affects the brain. Today, only 52 of the original volunteers are still alive, including six retired nuns in Mankato ages 93 to 102.

They turned their lives into open books and took batteries of tests.

As a final gesture, all agreed to donate their brains to science.

They were considered an ideal study group because they had so much in common: diet, lifestyles, backgrounds. By studying which ones went on to develop dementia, Snowdon hoped to learn what risk factors may be at play.

By the time Snowdon announced his retirement last year, he had amassed an extraordinary archive on the women's lives -- including baptismal certificates, autobiographical essays, family photos and MRI scans.

To scientists, it was "a gold mine," Lim said.

Today, the brains are carefully stored at one end of the University of

Minnesota Medical School, the boxes of documents in another, in a climate-controlled chamber of the medical library.

In all, roughly half of the nuns developed some form of dementia by the time they died, says Dr. Karen SantaCruz, a University of Minnesota pathologist who is in charge of studying their brains.

Intriguingly, she says, about a dozen had signs of Alzheimer's in their brain tissue but no sign of dementia while they were alive. "It would be great if we could find something from that subset that might help protect people," she said.

Now, her team is painstakingly scanning thousands of tissue samples onto computers, so they can be studied by scientists anywhere in the world.

Professor Harry Orr, who is overseeing the study, says the next phase will be a higher-tech version of the first study, using genetic tests and high-tech imaging to study how the brain ages. Of course, that depends on the willingness of other nuns to volunteer.

That probably won't be a problem, says Sister Catherine Bertrand, provincial leader of the School Sisters of Notre Dame in Mankato. "My guess is there would be some folks who really would be interested," she said, adding that the nuns are "very proud" of the study.

"If we can contribute in some small way to the cure of something like Parkinson's or Alzheimer's ... we would certainly want to be a part of that," she said.

Lim, the scientific director, calls it a tremendous responsibility. "The sisters asked me, so what are you going to do next?" he recalled. "I said we're thinking really hard." And, he added, "Please pray for us."

ON THE WEB

Information about the Nun Study can be found at
www.healthstudies.umn.edu/nunstudy .

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Citation: Nun Study returns to Minnesota, where scientists plan to research Alzheimer's, dementia (2009, March 25) retrieved 26 April 2024 from
<https://medicalxpress.com/news/2009-03-nun-minnesota-scientists-alzheimer-dementia.html>

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