

Longevity study to focus on Hawaii men over 91

Researchers will look at the diet, lifestyle and genetics of 1,200 Japanese Americans

By Helen Altonn

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RESEARCHERS are studying 1,200 Hawaii men who will be 91 or older next year in search of clues to a long, healthy life.

The men were part of a group of 8,006 Japanese Americans recruited in 1965 for the Honolulu Heart Program, based at Kuakini Medical Center.

They were born from 1900 through 1919 and identified through the World War II Selective Service registration file.

About 1,300 or 1,400 are still living, said Dr. Bradley J. Willcox, principal geriatric research investigator at the Pacific Health Research Institute. The oldest is 105; the youngest 85, he said.

More than 400 are reaching age 95, and at least half are in good health, he said.

Willcox will lead a four-year Hawaii Lifespan Study funded with a \$1.5 million grant to Kuakini Medical Center from the National Institute on Aging.

Dr. J. David Curb, PHRI president and chief executive officer/medical director, is co-investigator.

Their goal is to identify genetic, diet and lifestyle factors that contribute to a long, healthy life, Willcox said. They believe factors that affect insulin also will be important to longevity, he said.

About 30 to 40 percent of the Honolulu Heart Study participants who have lived to age 91 or more can walk up to half a mile with no difficulty, have strong hand-grip strength and high cognitive function, Willcox said, adding that it's "pretty amazing."

The idea is to study those still living who were born in 1915 or earlier "to see what differentiates those exceptional people from ordinary people in society who die at 77 and less," he said.

Curb, principal investigator for the heart and aging studies, said the Hawaii men are

"very resilient; they're healthy and live a long time. Just the fact that they're reaching 95, so many of them, is remarkable."

Compared with other people their age, Curb said, "they're remarkably functional



J. David Curb: *One study leader heads the Pacific Health Research Institute*



Bradley Willcox: *The institute's main geriatric researcher is co-investigator in the study*

and have less disease. They seem to cope better with disease than a lot of comparable populations of very old people."

The heart study was expanded to include a Hawaii-Japan Cancer Study, and at least three studies have been done of the children and grandchildren of the original participants. "So we're looking at multiple generations," Curb said.

The new grant is the first to look specifically at longevity and genes that affect life span, Curb said.

Willcox said they're using archived data on the men's diet and exercise. "How much green tea they drink, to how far they walk, are things we want to know," he said.

A preliminary look at data shows the long-lived study volunteers had lower blood sugar and better cholesterol levels, drank more green tea and weighed less than others their age, he said.

THOSE FACTORS and genes are believed to be associated with longer, healthier lives, he said.

Tim Donlon, molecular genetics director of the Queen's Medical Center's Genetics Center and professor of cell and molecular biology at the John A. Burns School of Medicine, will work with the researchers on the genetics.

Willcox said they believe Japanese Americans in the heart study with healthier aging will have many factors in common,

including lower insulin or insulin signaling, and protective genes.

Studies of animals have shown that if they possess a particular variation of a gene that affects insulin levels, those who have lower insulin signaling have a much longer life span, Willcox said.

"Think of an electrical signal," he said. Circuit breakers in the system can dampen the signal.

"The body has that, too, for genetic signaling. ... There are lots of switches in the system that can be turned off and on. We think people who live longer tend to have signals or circuit breakers that dampen the insulin signal.

"We're looking at what may be a model of slower aging."

By contrast, Willcox said, "You could almost look at diabetes as a model of accelerated aging," because of high blood glucose levels and insulin resistance.

"All those things (complications and diseases) that tend to happen to older people happen to diabetics at younger ages."

Willcox said the Hawaii Lifespan Study will be complementary to the Okinawan Centenarian Study, which he authored. It showed that maintaining a healthy weight with diet and exercise is critical to healthy aging.

"We can get some clues from Okinawa, but the beauty of the Honolulu Heart program is its longitudinal data, collected over 40 years," Willcox said.

The Japanese-American volunteers have contributed to numerous studies on aging and diseases, even after death.

"The men have been remarkably faithful to participating in the heart program, and despite the fact that they don't specifically get a lot of return from this, I think they're doing it to help their children and help their community," Curb said.