



Posted on: Saturday, August 21, 2004

Low calories tied to long life

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The latest analysis of data from a large group of O'ahu men of Japanese ancestry has provided the first reliable indication that a reduced-calorie diet — between 1,700 and 2,000 calories daily — promotes longevity, researchers say.

That conclusion is drawn from studying data drawn 36 years ago from 1,915 men, a select group among the total of about 8,000 recruited for the Honolulu Heart Program study.

The men were nonsmokers and had no other diseases, said Dr. Bradley Willcox of the Pacific Health Research Institute, who headed the team researching the longevity data. And although some of the men might have changed their diet somewhat over the years, researchers said the effect of reduced calories was pronounced enough to be counted as a factor in long life, Willcox said.

"There are a lot of people that change eating habits over time," he said. "The fact you can see a difference, almost 40 years later, despite the weakness of the measurement tool, suggests this must be a fairly powerful effect."

Willcox wrote an article based on his research, titled "How Much Should We Eat? The Association Between Energy Intake and Mortality in a 36-Year Follow-Up Study of Japanese American Men." It is due for publication Sept. 10 in *Journal of Gerontology: Biological Sciences*.

Of the 1,915 men in the longevity study, 779 are still alive, ages ranging from 85 to 105, according to the study report. The study found that the risk of mortality was lower in those who ate fewer calories, an observation most

pronounced at about 1,900 calories a day; Willcox said the average American man eats about 2,500 calories per day.

"Those who ate a Japanese diet lived longer, too," he added. "But that's a different paper."

The O'ahu study group, originally part of a collaborative research project also involving ethnic Japanese men in Japan and San Francisco, was recruited through their military draft records, he said. The fact that it was so large and that the men were already middle-aged when recruited from 1965 to 1968, created a study group whose life spans could be studied relatively quickly, he said.

Typically, large groups being studied over long periods are recruited much younger, said Willcox, geriatrician and assistant professor at the University of Hawai'i.

This study confirms theories first suggested in 1935 by the first animal studies showing a correlation between reduced calories and longevity, he said. The first work involved studies of rats.

The effect makes sense, he said, when one considers that living on fewer calories makes the body more efficient at processing food, resulting in the creation of fewer "free radicals." These highly reactive atoms or groups of atoms can cause damage when they react with important cellular components such as DNA, or the cell membrane. Cells may function poorly or die if this occurs.

"So we accumulate this wear and tear. It's like a car: Every car has a warranty period, every body has a warranty period.

"You can build cars in different ways," he added. "Say you are born with a Mercedes-Benz set of genes. But if you run it roughly, it may not run as well as that Ford Escort set of genes that most of us get."

Willcox is expecting some reactions from national media, as well as groups such as the National Institute on Aging.

"This (the link between diet and life span) is one of the great unanswered questions in biogerontology studies and aging research," he said. "A study

like this just hasn't been done before. And the fact that it supports what we see in the animal studies is important."

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