



STRONG HEART STUDY NEWSLETTER

INVESTIGATING DISEASE IN AMERICAN INDIANS

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SHS PHASE THREE: COOPERATION IMPROVES HEALTH OUTCOMES FOR NATIVE PEOPLE

After successful completion of the initial examination of the family feasibility study, Strong Heart Study investigators returned to the original participants to complete a third examination. By mid October the number of participants from the original cohort examined in each study center is as follows: Oklahoma - 659, the Dakotas - 683, and Arizona -553.

In addition, a new asthma sub-study has examined 63 participants in Oklahoma, 47 in the Dakotas, and 40 in Arizona. The asthma study will be conducted in each center with approximately 200 individuals from the current study who show signs of asthma.

Those who are part of the third examination should expect to encounter some of the same tests, however some new ones such as ultrasound of the carotid arteries in the neck, will also be given. The wife of one recent examinee wrote the Principal Investigator of their center (letter at right), thanking the examiners for discovering a blockage of the blood flow in her husband's neck. Such a blockage could have resulted in a stroke, heart attack or death if not detected and treated. That test, and another gauging arterial stiffness, are two of the new tests that are part of the current examination.

One universal concern of study participants is their uncertainty about what happens with the data gathered during studies. Statistical and epidemiological data from the Strong Heart Study are published as articles in scientific journals including the *IHS Provider*. Data also are provided for local and national needs. Two specific, recent requests deserve to be mentioned here: first, the annual National Heart, Lung, and Blood Institute Fact Book will incorporate rates of heart attack and stroke for American Indians to compare with other studies within the United States; and, data were supplied to the Healthy People 2010 publication, a policy document that sets goals for improving the health of the nation's population over

the next ten years.

Thanks to the Strong Heart Study, data for American Indians will be included in these reports and will factor in the decisions regarding the future health needs of American Indians. The availability of these data for local use as well as for national reports and policy making are a direct result of the continuing cooperation and support of the communities in the Strong Heart Study.

We appreciate that support and the conscientious efforts of the Strong Heart Study staff to make this project a success. Working together, we can have a positive impact on the health of American Indian People.

Lawton, Okla.

Dear Dr. Lee,

I am writing this letter to thank you and the Strong Heart Study staff at the Lawton Indian Hospital for what you have done for my family.

Recently, my husband and I participated in the third phase of the study. It was found that my husband had a blockage of his left carotid artery, which if left undetected, could have led to a stroke, heart attack, or even death. My father-in-law had atherosclerosis and had a massive heart attack.

I am so very thankful for the Strong Heart Study and have been encouraging the people who have been asked to participate, to do so. Your Program is very important to our Indian People.

Thank you again for all the good work you are doing.

Sincerely,

Nina Youngman
Comanche Tribal Member



SHARING AND CARING:

SHS Recruiter Embodies Spirit of Traditional Values Exemplified in Study Goals

by
Marcia
O'Leary,
Field Coordinator
Strong Heart Study
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The Lakota people have much to teach the world about the concept of giving. One of the most respected traits in this culture is not what one keeps and holds only for themselves but rather what is shared with or given away to neighbors, community and tribe. Generosity is one of the most highly respected qualities a Lakota person can have.

We in the Dakota Strong Heart Study Center are gifted in many ways with the community members who participate, the staff members giving of themselves and the leadership we receive from Dr. Welty, but a very special gift has been in knowing, working with and learning from senior recruiter Lillian Brown.

Lillian's philosophy is to everyday go out and make someone's day a little brighter. She begins each day with a prayer and a plan to make someone's day better or to lighten someone's load. Caring for others shows in Lillian's recruitment strategy. She invites all the Strong Heart participants to come to the study clinic for a good cardiovascular check up.

From researchers to tribal leaders to participants or new staff members, there are no strangers in Lillian's world. She is always the first one to offer an



SHS staff members (l - r), Alan Crawford, Linda Poolaw, Bert Lewis, Juanita Cortez, and Lillian Brown, participate in a prayer ceremony prior to one of the study training sessions held in Oklahoma City in April, 1997, in preparation for Phase III.

open hand of acknowledgement and greeting and treats all as if there is no one she would rather meet.

As Arliss Keckler, Tribal Health Director for the Cheyenne River Sioux Tribe observed, "Lillian goes out to people to visit them and if she recruits them while she is there, then she is happy. But she keeps going out to them because she cares about them. Her efforts at recruiting and reaching out to people make it possible for the rest of us to do our jobs."

Ms. Brown was born on the Moreau River in an area known as On the Tree. She was raised by her grandparents and a large extended family of brothers, sisters, aunts and uncles.

As an elder in the community she knows as well as anyone, the tremendous changes Indian people have undergone.

"A long time ago we were always on the move physically," she said. "With today's generation everything is always in a hurry. Our diet is different today, it's already prepared or it goes into a microwave with no effort put into it. I like to visit with people about how we should be eating and living. We don't very often go into the doctor for a complete physical so it's important to take advantage of programs like the Strong Heart Study that help us to learn more about health in Indian people. We are seeing too much obesity and

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Despite well established risk factors for coronary artery disease, many of these heart patients do not exhibit the typical and recognized traits or characteristics of this disease. People who live in different geographical locations also experience differences in their rates of coronary heart disease and these differences are largely unexplained.

One avenue of investigation that shows the potential to solve some of these puzzles involves infectious agents such as bacteria and viruses. The Strong Heart Study has received funding to look at these infectious agents that are suspected to initiate or contribute to atherosclerosis (the blockage of arteries with fatty deposits).

In a recent investigation, this bacterium was identified in the coronary arteries of Alaska Natives and in their stored blood. This suggests that the infection preceded atherosclerotic disease, even when the infection was not advanced or found in elderly patients. Other questions remain about the role these infections play. Investigators need to find out how frequently infections occur before the diagnosis of coronary heart disease and how the infections are related to other proven risk factors.

Dr. Michael Davidson at the Alaska Native Medical Center in Anchorage will assist the SHS to identify appropriate stored serum specimens obtained from SHS participants when they enrolled.

These tests will be conducted at the University

INFECTIONS AND ATHEROSCLEROSIS: POSSIBLE LINK BETWEEN DISEASE-CAUSING AGENTS AND HEART DISEASE EXPLORED IN NEW SHS STUDY

Over the past several years, *Chlamydia pneumoniae*, has been shown to initiate blockage of coronary arteries when given to laboratory animals. This is a different organism from the chlamydia that causes genital infections.

Another infectious agent, human cytomegalovirus (CMV) also has been identified as responsible for the rapid-onset atherosclerosis that occurs in patients who receive heart transplants and when blockage re-occurs after cardiac bypass surgery. Both *Chlamydia pneumoniae* and CMV infections can become chronic and cause inflammation in the arteries which may also increase the risk of coronary heart disease.

Both these infections are very common and their prevalence increases as people age. Moreover, *Chlamydia pneumoniae* also may be a common cause of pneumonia in American Indians.

of Washington by Dr. Thomas Grayston, who first discovered Chlamydia pneumonia, and at the Medlantic Research Institute by Dr. Steve Epstein, who has previously led CMV researchers at the National Institutes of Health.

The research team hopes to expand their studies to look at coronary artery disease in relation to the type of immune response individuals develop against these infectious agents. They also hope to include markers of inflammation and other infections common in American Indians. These results will all remain confidential and be reported only after tribal review.

Since treatment is available for these infections, studies are under way to see if they might provide effective prevention of coronary heart disease in patients with a previous heart attack.

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diabetes today. We don't talk to our children enough about how we should be eating and living. Strong Heart talks about prevention and finding out early if something is wrong so that we can treat it."

Lillian believes in the looking at the positive side of all situations. She also understands the value of Indian traditions like helping out people in

need and the value of getting the best in health care. Alan Crawford, coordinator of the Dakota SHS noted that "Lillian is the spirit of the Strong Heart Study."

Recruiting is a gift of caring that Lillian offers to a community she loves. We all have benefited from the caring and sharing that is so much a part of this very extraordinary woman.



DIABETES AND THE STRONG HEART STUDY:

SHS INVESTIGATORS LOOK INTO TYPE 2 DIABETES, INSULIN RESISTANCE, AND THE LINKS TO HEART DISEASE

Diabetes has become one of the most serious and prevalent diseases facing Native Americans. One of the characteristics of Type 2 Diabetes, the type most common in Native Americans, is called insulin resistance. Insulin is a hormone produced by the body to help cells turn blood sugar into energy. Insulin resistance means that the body produces insulin but muscle and other tissues of the body do not respond to it. Insulin resistance is a common feature among populations with high rates of diabetes.

One way to determine if a person has insulin resistance is to measure the insulin level in the blood to see if it is higher than normal.

The Strong Heart Study measures insulin levels in the blood samples from all participants. However, this measurement can be influenced by many factors so it is not the most reliable way to measure insulin resistance.

For this reason, approximately 75 Strong Heart Study participants from the Arizona and Dakota centers were invited to participate in a direct measurement of insulin resistance called the FSIGT (Frequently Sampled Intravenous Glucose Tolerance Test). In the FSIGT, insulin is injected

into an arm vein and, over a three hour period, 15 blood samples are taken from the other arm. The blood sugar and insulin levels are then measured in each of these samples and a computer model is used to calculate the degree of insulin resistance.

The Strong Heart Study staff members extend a special thank you to these participants who were willing to undergo this lengthy procedure. We are happy to report that the testing was highly successful and that all of the computer modeling of the insulin resistance measurements has been completed.

We are now analyzing the relationship between insulin resistance, diabetes, and other risk factors for heart disease in the participants of the Strong Heart Study.

In addition, since this very same measurement was conducted in 1,600 White, Black and Mexican American members of another National Heart, Lung and Blood Institute-funded study, we will be able to compare the data from the Strong Heart Study to the data from these other groups to learn even more about insulin resistance in American Indians. All of this information will lead to better strategies for treating and preventing diabetes.

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