



# STRONG HEART STUDY

INVESTIGATING CARDIOVASCULAR DISEASE  
IN AMERICAN INDIANS

## newsletter

[strongheart.ouhsc.edu](http://strongheart.ouhsc.edu)

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### Still Time to Participate in Phase V

The Strong Heart Study (SHS) is the longest running study of cardiovascular disease that has ever been undertaken in Indian Country. Why is this important? Research helps to develop standards of care that are specific to the patient seeking care. Simply stated, research is needed to find better ways of taking care of individuals since not all people are the same.

When the SHS was originally funded by the National Heart, Lung, and Blood Institute (NHLBI) in 1988, it was in part a realization that there was not sufficient research being conducted in minority populations. The NHLBI realized that it was important that research be done on populations such as women, American Indians, Blacks, and people of Latino descent.

Since this project began, there has been a great deal of information learned about heart disease in the American Indian communities. Much of this information has been translated to the communities and their medical providers through publications such as this newsletter or publication manuals and presentations that are given to the medical providers, tribal health directors, and tribal councils. Individual results are sent home with participants or to their medical providers at the participant's request so they can be used for baseline information in health maintenance.

Without the commitment of the participants, this study would not be possible and important data would not be collected. For this reason, recruitment of participants is an essential task of SHS staff.



Recruitment of participants varies by field site and seasonal activities and might include mailings, phone calls, home visits, or attending community events such as pow-wows, local baseball games, and health fairs. All SHS staff is involved in some form of recruitment, from word of mouth to mailings or phone calls. Staff schedules remain flexible to include weekend clinics, lunch hours, and holiday clinics in order to accommodate participants. In some locations, tribal council gives administrative leave if an employee participates in the study, which not only provides logistic support for participation but demonstrates the degree of importance and support the tribal council gives the SHS.

Throughout the five phases of the SHS, the contribution of involvement has been an amazing gift by the SHS participants. Only through participation in legitimate research can health be understood and improved for one's children, family, and community. The participating communities in Oklahoma, Arizona, and Dakotas have supported the SHS by maintaining nearly 90% participation in the follow-up SHS studies. Phase V promises to be another endorsement of the SHS participants' belief that health can improve if people participate in the change. If you are a SHS participant and have not yet completed your exam, contact your local center at the number listed below. If you are a participant who has completed your exam in Phase V, thank you for your commitment to the future of health in the American Indian community.

If you have not completed your exam for Phase V, please contact your local center to schedule your next appointment.

<u>Oklahoma:</u>	<u>Arizona:</u>	<u>Dakotas:</u>
Anadarko: (405) 247-9053	(602) 277-0488	Eagle Butte: (605) 964-1260
Lawton: (580) 248-7715		Kyle: (605) 455-2955
Toll Free: 1-888-231-4671		Toll Free: 1-866-865-3418

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## Strong Heart Study Examines Quality of Care for Heart Attacks

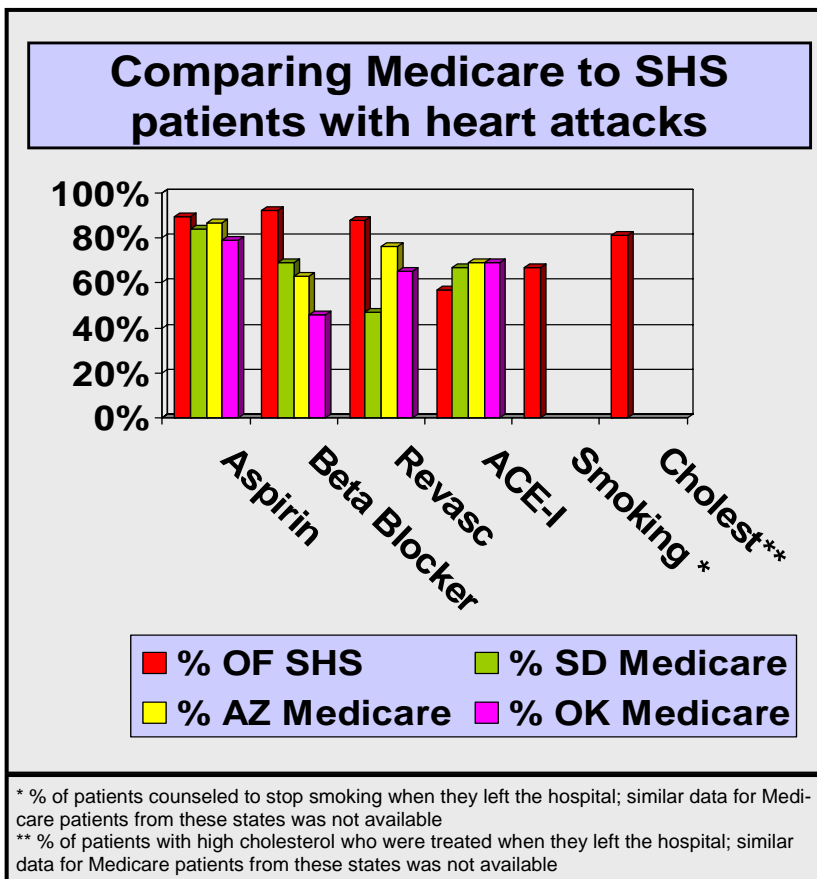
Many heart attacks occur in people without warning and death can come quickly, as when the beloved NBC reporter, Mr. Tim Russert, died recently. That is one reason that the SHS program in South Dakota has been working with the Centers for Disease Control to encourage American Indian people to take early symptoms of heart attack very seriously; and to contact their local ambulance at the first sign of trouble.

Over the past 20 years, there have been many improvements in the emergency treatment of heart attacks and proven reductions in the death rate of patients that enter medical care. As with many medical advances, however, the use of these newer treatments has not been uniformly applied by doctors and hospitals. Sometimes this is because of a lack of equipment or specialty training; but at other times, it is simply due to the difficulty providers have in changing their practices. Since the early 1990's, the federal Medicare office has promoted improvements in the care provided to all patients with heart attacks. We have compared the care received by SHS participants who had heart attacks

occurred from 1999 to 2005. The overall quality of care provided by the initial providers (IHS and small community hospitals) and the larger, more specialized facilities that patients are usually transferred to, was comparable to (and in some cases better than) the care received by the average Medicare recipient in the US. For example, it is very important for patients with heart attacks to receive a regular aspirin tablet within the first 24 hours after they feel a heart attack coming on because aspirin may prevent blood clots in the heart muscle that would worsen the damage to the heart. Heart attack patients should also receive a "beta-blocker" medication during the first 24 hours to help the heart work more effectively. Special "clot-dissolving" medicines, "stents" and other very specialized ways to open clogged heart vessels may help to restore circulation to the heart, thereby saving heart muscle. This is called "revascularization" and is recommended for many (but not all) patients who have a heart attack. Helping patients stop smoking, medicines called "ACE inhibitors" and treatments for high cholesterol at the time the patient goes home

are also important to prevent future heart trouble. Comparisons of these measures of quality of care are shown in the chart. The most recent Medicare data from the states is from 1997 to 99, whereas the data from SHS is more recent, from 1999 to 2005, so the different time periods might explain some of the differences seen. We have been sharing these results with some of the providers who care for American Indian patients and we know that they are dedicated to improving these numbers further.

We reviewed the medical records of 75 SHS participants who had a heart attack that



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## Asthma in American Indian Adults

One of the benefits of the Strong Heart Study is that the survey collects information about conditions, in addition to cardiovascular diseases. One example of this is the opportunity to survey this special Indian population for the presence of bronchial asthma. After many years of study, there is still much to be learned about asthma, not only as to causation, but also how it may be best managed. Asthma is a condition in which there is obstruction and narrowing of the airways in the lung. This obstruction and narrowing is caused by inflammation in the airway wall itself, and also contraction of muscles in the airway wall. This obstruction and narrowing leads to repeated episodes of wheezing, shortness of breath, tightness in the chest, and coughing, particularly at night or in the early morning. The reduction in the flow of air is most noticeable when breathing out rather than breathing in. The amount of air breathed in and out and the flow of air while breathing out can be measured with instruments and provide physicians with information about the severity of the condition as well as response to medication.

Until a few decades ago, asthma was very uncommon among Indians, but several reports have indicated that its prevalence has increased in recent years to levels almost the same as that experienced by the rest of the US population. Very little is actually known about the causes and clinical manifestations of asthma among American Indians, especially among those who are older than age 50 years. A sample of participants in Phase III of the Strong Heart Study completed a standardized questionnaire related to breathing, coughing, and other conditions associated with asthma. Those who reported asthma or possible asthma underwent studies of the amount of air that the lungs could contain along with measurements of the flow of air. This test is called spirometry and involves an individual taking in the deepest breath that they can and then blowing it out as fast as they can. Also, because there is a strong association of asthma with allergies such as hay fever, participants received standardized skin tests for various allergens known to predispose to asthma.

Of 3,197 participants in the third examination, 6.3% had physician-diagnosed asthma and 4.3% had probable asthma. This means that one in ten individuals in the study had

either definite or probable asthma. Physician-diagnosed asthma was more common among women (8.2%) than men (3.2%). The 435 participants classified as having definite or probable asthma underwent more studies in order to better understand certain aspects of the disease. As expected, among those for whom a physician had previously made a diagnosis of asthma, related conditions were quite common. For example, 97% reported trouble breathing and 52% had severe persistent disease. The volume of air that could be forcibly exhaled in one second was only 61.3% of the volume that was predicted. More significantly, among this group, 67.2% reported a history of emergency department visits and/or hospitalizations in the last year. Furthermore, as in other populations, while the majority reported having prescriptions of "rescue" medications (to improve breathing when experiencing a breathing problem), very few reported having been prescribed "controller" medications to be taken daily to prevent breathing problems.

The asthma study showed prevalence rates to be about the same in each of the three Strong Heart Study centers and about the same as reported for non-Indians in the US. Further, the study showed that asthma is a serious condition among older American Indians, associated with low lung function and high rates of clinic and emergency room visits. The study results indicate there is a great need to improve the management of asthma among Indian people by providing a course of chronic care that would include needed

prescriptions for controller medications and education in how to use them to help reduce the development of breathing problems. Development of a strong prevention program would likely reduce the number of emergency room visits and hospitalizations for asthma attacks and slow the progression of the disease.



SHS

*The findings were published in the medical journal, CHEST (Volume 131, pages 1323–1330 in 2007). The authors of the study were Anne E. Dixon, MD, FCCP; Fawn Yeh, MPH, PhD; Thomas K. Welty, MD, MPH; Everett R. Rhoades, MD; Elisa T. Lee, PhD; Barbara V. Howard, PhD; and Paul L. Enright, MD.*



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**Strong Heart Study**

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## **Nutrition and Heart Disease in American Indians**

*The Strong Heart Study was the basis for a book chapter about nutrition and heart disease in American Indians, which will be published soon. This article is a summary of that chapter.*

American Indians were originally thought to be naturally protected from heart disease, but we now know that this is not the case. American Indians have been undergoing a rapid change in lifestyle, with changes in traditional patterns of activity and diet that might be expected to increase their risk for heart disease and diabetes. Nutritional factors can add to the development of heart disease, cancer, and cirrhosis, which are some of the leading causes of death in American Indian (AI) people. Nutrition also plays a role in the development of diabetes, obesity, high blood pressure, and dental problems. Results from the first Strong Heart Study examination show that fewer than half of the participants surveyed met the guidelines for dietary recommendations to prevent these chronic diseases.

Information from differing AI communities are consistent: American Indians are eating less traditional food and more processed food. Historically, American Indians depended on food growing in the wild, such as nuts, fruits, berries, roots, and wild game. Whole grains are richer in nutrients and lower in calories than purchased food. Wild game is much lower in fat than purchased meat such as sausage or lunch meat. Many American Indians were farmers, spending a lot of energy to grow crops. Now that more AI communities have access to a more prosperous lifestyle, they are doing less physical activity, and eating more processed foods such as white bread, soda, fried foods, and bacon, for example. Among

people of the same heritage, rates of heart disease are less in those living a traditional lifestyle than those living in an affluent environment. This finding suggests that no matter what your family background may be, the traditional AI lifestyle may protect against heart disease. This lifestyle includes a good deal of physical activity, and eating low fat meats and plenty of vegetables, fruits, and grains.

The chapter also includes sections on nutrition in American Indian children and programs that exist to tackle the problems of too much of the wrong foods and not enough physical activity. The participants of the Strong Heart Study have made a great contribution to understanding the effects of changing diet and activity patterns on heart disease in American Indians, and we are proud that this chapter



can serve as a summary that should be useful for communities and health care providers. SHS will make copies of this chapter in its entirety available to communities and providers as soon as possible after the book is published.

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*Eilat-Adar, S., Xu, S. (Jiaqiong), Nobmann, E.D., Mattil, C.Z., Zephier, E., O'Leary, V., Howard, B.V.. Nutrition and Cardiovascular Disease in American Indians and Alaska Natives. (Book chapter to appear in the book, Fatty Acids in Health and Disease, to be published by the American Oil Chemists Society).*