STRONG HEART STUDY

INVESTIGATING CARDIOVASCULAR DISEASE IN AMERICAN INDIANS

newsletter

strongheart.ouhsc.edu Volume 20, Number 1 May 2008

Young at Heart: Octogenarian Jasper Marrietta

The Strong Heart Study (SHS) would like to take a moment and recognize an inspirational individual. Jasper Marrietta, an 87 year-old member of the Gila River Indian tribe is an original cohort member of the SHS, beginning his involvement in the SHS in 1989. He currently resides in Blackwater, a community on the Gila River Reservation.

Bert Lewis has worked on the Strong Heart Study for more than 10 years, and describes Mr. Marrietta as someone who is "very intellectual, he has a sharp mind and is a fun loving, outgoing and humorous person." Bert further states, "he loves to joke around and laugh with people, but he is also very interested in helping his community. That is why he originally got involved with Strong Heart." Tanya Molina, who also works for the Strong Heart Study, indicated that "Mr. Marrietta likes to talk about how much he loves his wife. His health is great. He doesn't have diabetes or anything else."

Mr. Marietta worked for more than 28 years for the federal government as a supply clerk in White River Arizona before returning full time to his home, the Gila River Reservation. Upon returning to Gila River, Mr. Marrietta was employed as a farmer for approximately 6 years for the Gila River Tribe. He was responsible for planting groves of citrus fruits and olives. Several people describe Mr. Marrietta as someone who exercises regularly, gets plenty of sleep, watches his diet, pays attention to his health, and just enjoys life. Mr. Marrietta is a shining example of the positive aspects of life, great health, and longevity we all strive for.

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Phase V Exams Underway

We are currently conducting Phase V Strong Heart Family Study exams (that began May 2006). If you have not been seen in this phase, please contact the Strong Heart Study office that is nearest to you to schedule your appointment. If you are unsure about if you have been screened already, feel free to contact your nearest office and we will be happy to assist you.

Please note that we are only scheduling appointments for the participants who came for their exams along with their family members either in Phase III (May through December of 1997) and/or in Phase IV (February 2001 through September 2003). We are not enrolling any new participants at this time. Please call us if you have questions about your eligibility to participate. Below are Strong Heart Study office locations and phone numbers:

OKLAHOMA	ARIZONA	DAKOTAS
Anadarko: (405) 247-9053	(602) 277-0488	Eagle Butte: (605) 964-1260
Lawton: (580) 248-7715		Kyle: (605) 455-2955
		Toll-free: 1-866-865-3418

In this issue...

The Impact of Physical Activity on the Development of Gall Bladder Disease

The primary focus of the Strong Heart Study (SHS) was to examine cardiovascular disease in American Indians from 13 tribes/ communities in Arizona, Oklahoma, and the Dakotas. However, the SHS also examined gallbladder disease since it was known to be a huge problem in these American Indian communities. In addition, the SHS also measured physical activity levels since physical inactivity has been found to be related to many important diseases and conditions such as cardiovascular disease, diabetes, and obesity. Determining both physical activity and gallbladder disease together in the SHS allowed us to examine if physical activity played a significant role in protecting against gallbladder disease development.

Figure 1: Existing Cases of Gall Bladder Disease

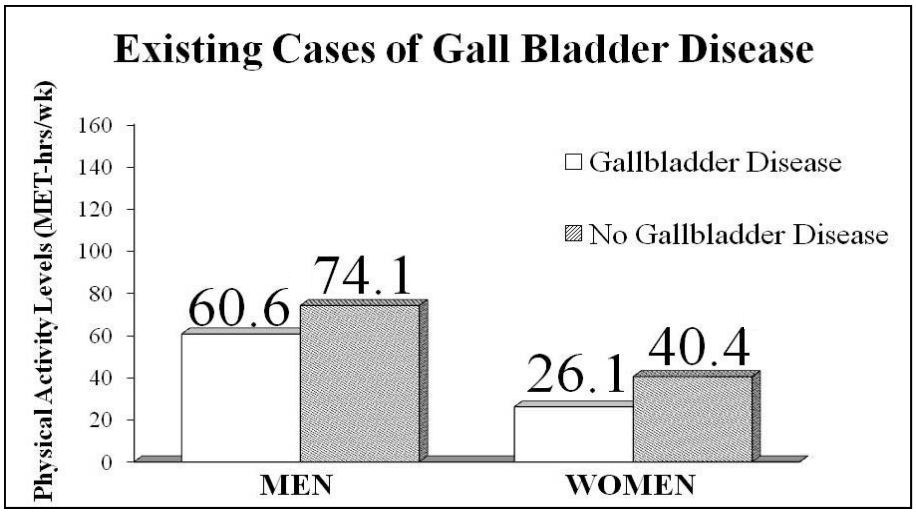
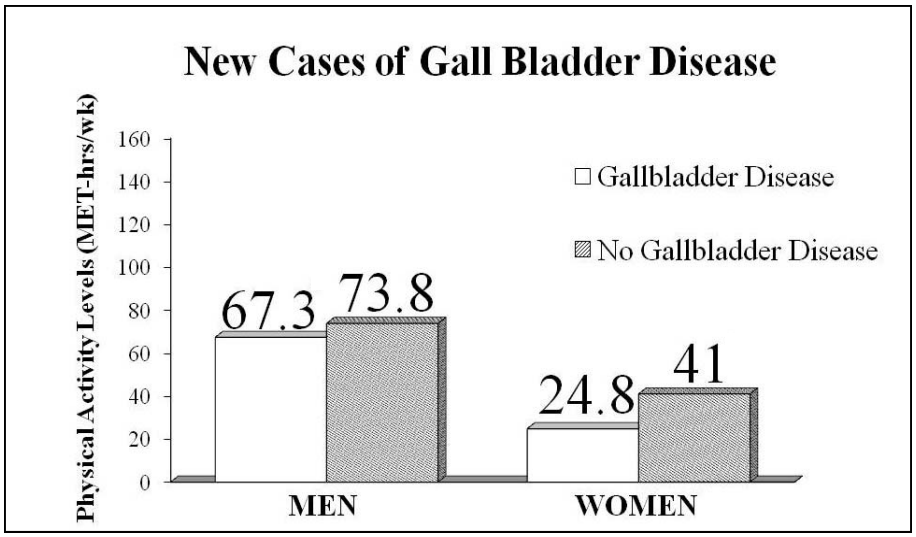


Figure 2: New Cases of Gall Bladder Disease



The best way to evaluate whether someone has gallbladder disease (GBD) is with the use of gallbladder imaging (or ultrasonography). During the second SHS clinic visit (1993-1995), GBD was determined by gallbladder ultrasonography offered to all participants. Participants who reported at baseline (the beginning of the study) that they had gallbladder surgery or that a physician had told them that they had gallbladder disease were considered an "***existing case of GBD"***. Anyone who was NOT considered an existing case of GBD at baseline but was found to have GBD at the second clinic visit based upon the ultrasound results was considered to be a "***new case of gallbladder disease"***. Past year physical activity levels were assessed at the first and second clinic visits by a physical activity questionnaire that had been developed and tested in American and Canadian Indians.

As you can see in Figure 1, SHS men and women with GBD at baseline (in white) reported less activity than those men and women without GBD (shaded). Likewise, if you look at Figure 2, men and women who did not have GBD at baseline but developed GBD by the follow-up visit (considered to be a new case of GBD) were less active in the past (at the baseline clinic visit) than those individuals who never developed GBD. Even after consideration of obesity level, physical activity remained related to gallbladder disease status. These findings were particularly strong for those individuals without diabetes.

Based upon these important results, it appears that physical activity is a key factor in gallbladder health and plays a role in the prevention of gallbladder disease in a population at high risk for gallbladder disease. These findings provide yet another reason to encourage the achievement and maintenance of a physically active lifestyle.

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Reaching Out: SHS Researcher Serving in Afghanistan

A member of the Strong Heart Study family is using skills learned while working with SHS to treat soldiers in Afghanistan. Brian O'Leary is a member of the Cheyenne River Sioux Tribe and was raised north of Eagle Butte, S.D. He attended the South Dakota School of Mines and then completed his PhD in psychology at the Utah State University at Logan, UT. He used SHS data for his doctoral thesis, which investigated the association of psychosocial factors such as depression and hostility to the development and control of diabetes.

Brian has put a lot of hard work and dedication into the SHS. Prior to using the SHS data, he submitted a thesis proposal, which was approved by the SHS Publications & Presentations (P&P) Committee after determining that the planned analyses would promote the SHS goals and mission. Brian then worked with the SHS investigators, including statisticians, and also with professors and doctors at his university to successfully analyze and write his thesis. His analysis was checked and verified by statisticians at the SHS coordinating center to ensure that the analysis was correct. Brian successfully defended his thesis to his professors and was then awarded his PhD. If Brian decides to publish his thesis, the paper will need approval by the P&P, Tribal, Institutional Review Board and National Institutes of Health review committees prior to publication. This is a very intense process that all PhD students and other investigators must go through to utilize SHS data for their investigations. It safeguards tribal interests and ensures that investigators correctly interpret SHS data.

Today, Brian is using the knowledge that he learned in part through his education, his life experiences, and his military training to reduce combat stress and prevent the development of Post Traumatic Stress Disorder in the soldiers on the front lines in Afghanistan. He works in a team, which consists of a psychiatrist, two mental health technicians, and himself as a psychologist with the 173rd Airborne Brigade Combat Team. Stress impacts the health of both civilians and military personnel in many ways. It is clear that the sooner soldiers can receive help after seeing or experiencing shocking or tragic events, the less likely they are to suffer long term effects from that trauma.

Brian assisting farmers in Afghanistan vaccinate their animals.

Mental health care is a vital need for our troops. The 173rd Brigade has lost a number of soldiers. Brian's service unit includes over 30 forward-operating bases and over 3,600 soldiers. The needs of the soldiers are multiple and varied as stress impacts people differently. Some soldiers do not seek help for stress reactions and internalize their stress, which often manifests itself in behavior and/or sleep patterns. Individual treatment options vary depending on where the soldier is assigned. Many soldiers are in a remote location on the front lines and not able to make an appointment for treatment. Brian spends 90% of his time going to the remote forward combat areas. This is Brian's second tour of duty in Afghanistan.

Although Brian treats stress reactions, he is not immune to the heartbreak of war himself. Brian recently accompanied the body of his younger cousin, Cpl. Tanner O'Leary, home from Afghanistan for burial on the family ranch in South Dakota.

Brian credits the SHS doctors, staff, and participants for helping him with his education so that he in turn can provide psychological services to the soldiers. The contribution of the Strong Heart participants is well recognized and vitally significant in learning more about heart disease and its risk factors in American Indians. It is no surprise that the scientific integrity that SHS is known for has assisted in training a health-care provider serving our nation's finest.

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ADDRESS SERVICE REQUESTED

Why the Strong Heart Study Collaborates

The Strong Heart Study investigators often receive questions from the study communities asking why the Strong Heart Study collaborates with investigators outside the study and sometimes with investigators outside the United States. This is an important question, particularly for study participants. The Strong Heart Study investigators believe good studies done in American Indian communities must be structured as a win-win for both the communities' interests and the investigators' interests so that both have a vested interest in the success of the study. A key issue is making the most of the contributions of time, data, and samples of study participants. There are two reasons collaboration is a part of the Strong Heart Study.

First, biomedical science is complicated and grows more complex with each new discovery. The result is that no one person or small group of individuals is sufficiently knowledgeable in all aspects of health, biological systems, measurement methods and population-based research to be able to conduct the scientific inquiry to its fullest. The SHS investigators have established credentials in many areas related to clinical cardiovascular disease, diabetes, cardiac imaging, molecular genetics, statistical genetics, and chemistry laboratory methods. However, as science progresses, it grows more complicated, and the search for the causes of disease requires finer and finer expertise. Thus, it is useful to employ the best experts in areas where the science is likely to provide the greatest benefit to health and understanding. The best experts are not always available among the existing investigators or among investigators in the United States.

Second, for some scientific questions, the sample size of a single study is not sufficient to provide an adequate answer. For example, rare diseases may affect only one person in a thousand. A study like the Strong Heart Study may have too few individuals to address the disease of interest, but combining a few cases over many studies may provide enough cases to provide answers.

For these reasons, the Strong Heart Study collaborates with investigators from around the United States and sometimes around the world so that American Indian data are taken into consideration as science seeks to answer biomedical questions. For example, Strong Heart Study data have been provided to one consortium evaluating whether fibrinogen, a key contributor to the ability of blood to clot, is a risk factor for heart disease. This is important for American Indians because fibrinogen levels are higher among American Indians than other subgroups of the US population. Another collaboration among large studies is comparing risk functions for cardiovascular disease to determine if all populations have comparable relations of risk factors to cardiovascular disease. It clearly demonstrates that American Indians have a different risk profile with greater risk from diabetes. Finally, the SHS collaborates on a study of peripheral arterial disease because it is strongly related to heart disease and is more common among those with diabetes. In all these cases, superior research can be done because of the bigger numbers that come from working together. Results from these larger studies have more credibility and are returned to communities to help improve the lives of Strong Heart Study participants.

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