



Strong Heart Study Newsletter

Investigating Cardiovascular Disease in American Indians

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LIVER STUDY OVERVIEW AND RECRUITMENT

Among American Indians, liver disease is the fourth leading cause of death. One form of liver disease is called fatty liver disease. It occurs when fat deposits in the liver. Over time, fat deposits can build up and can cause the liver to become scarred, like a scar that forms from a wound. Sometimes this can even lead to liver cancer. Fatty liver disease may have some of the same causes as heart disease. These include obesity and diabetes, but also include heavy drinking and hepatitis infection. Little is known about which are the most important causes of fatty liver disease and scarring. Even less is known about this process in American Indians.

The only way to diagnose liver disease is for doctors to look at a small piece of the liver tissue (a biopsy). But some markers in the blood can indicate that

someone is at risk for it. Previous Strong Heart Study (SHS) exams show that over 65% of SHS participants have blood measures that show that some amount of liver injury (fat deposits or scarring) might have already occurred. Given this, it is important to ask questions about fatty liver disease and its causes in the SHS. A new study is doing just that. The study will be conducted in Oklahoma and Arizona. Participants

will undergo an imaging study. This will allow investigators to get pictures showing the amount of fat and scarring in the liver of each participant. They will then ask

how much of the fat and scarring is related to the known causes. They hope to understand how much liver disease exists in American Indians and identify ways to address it early.

Liver Disease

- 4th leading cause of death among American Indians
- Fatty liver disease occurs when fat deposits in the liver. Fat deposits can build up and cause the liver to scar.
- A new study will begin recruitment in Summer 2017 in Oklahoma and Arizona to determine how much liver disease exists in American Indians and identify ways to address it early.

CHEYENNE RIVER'S 3RD ANNUAL RESEARCH SYMPOSIUM CONNECTING RESEARCH TO THE COMMUNITY

Missouri Breaks Industries Research, Inc. (MBIRI) organized and hosted the 3rd Annual Research Symposium "Researching, Restoring & Rebuilding Our Oyate for a Longer Life" in Eagle Butte, South Dakota on Tuesday, April 11th. To reach a diverse population from the community and beyond, the symposium included a leadership breakfast and sessions for adults and high school students. Over 180 adults and students participated in the event. Joseph Yracheta, Missouri Breaks Research Scientist said, "A multi-faceted approach is necessary for all to see the benefits that



Symposium banner & logo

come from research". Yracheta also said, "The Symposium engages the community, builds student capacity and demystifies research by bringing researchers to the grass roots level."



Symposium participants during opening prayer

CHEYENNE RIVER'S 3RD ANNUAL RESEARCH SYMPOSIUM CONNECTING RESEARCH TO THE COMMUNITY (CONTINUED)



Students engaging and responding to questions at the 2017 Research Symposium

The day's events started with a Leadership Breakfast that connected tribal and community leaders with researchers from across the United States in a discussion about research needs and results. Local conversations like this are important to help researchers address current and pressing issues and to keep local leaders informed of ongoing research and results along with learning about state-of-the-art technologies.

New for 2017 was a student program where over 75 high school students learned about research results and conducted hands on research. Students were also invited to bring their research to present to the public over the lunch hour. Thirty students shared their research projects. The students reported that they liked learning about the various research topics and opportunities available to them (scholarships and jobs). The students said in the future they would like more hands on learning so they can test and apply what they are learning.

To encourage and support the interests of young researchers MBIRI invited students to apply for two - \$250 scholarships for all participating students and two - \$500 scholarships for students who presented research posters. All participating students also had the opportunity to apply for summer internship positions with Missouri Breaks Industries Research, Inc. in

Eagle Butte as a way to learn about local research and the process of conducting research.

The adult program featured researchers who have or are currently doing research on the Cheyenne River Reservation. Speakers were: Dr. Paul Spicer, University of Oklahoma who is doing research on what Native people think about research and how to make research more responsive to our community; Doctors Melissa Gonzales and David Begay, University of New Mexico who spoke on environmental science and ways for traditional tribal knowledge to improve upon it; Dr. Lyle Best, MBIRI shared Strong Heart Study findings; and Dr. Mafany Mongoh of Sitting Bull College discussed research regulation. Feedback from participants showed that people are comfortable with research, they desire resulting benefits and want leaders to be more involved at attracting and approving research. One third of the student participants reported that they saw themselves in some type of future science or research career. Student and adult participants said they would attend future symposiums. One adult participant stated, *"Participating was encouraging and refreshing"*.

Interest in research is growing in scope, partnership and purpose. Marcia O'Leary, MBIRI states, *"The symposium is an important avenue to share updates and results on research that is currently or has taken place on and around Cheyenne River and to inspire future researchers"*. This combination of adult and student participants and research presenters is a model of opportunity for growth and excellence for the future!

Please check out our new Strong Heart Study Website!

<http://strongheartstudy.org/>

We continue to add content and welcome your suggestions and feedback!

DR. MANDY FRETTS — AN AMERICAN INDIAN RESEARCHER

Mandy Fretts is an Assistant Professor of Epidemiology at the University of Washington in Seattle, WA. She is interested in nutrition and physical activity, and in figuring out ways to prevent diabetes in American Indian communities. She chose this career because many people in her community (Eel Ground First Nation—Mi'kmaq) are affected by diabetes and access to healthy foods is very difficult in northern Canada. She started working with the Strong Heart Study 11 years ago when she was a student at the University of Washington.

As a student, she worked on a project in the Strong Heart Study related to diet, physical activity and diabetes. This work showed that: (1) diets low in processed meats; and (2) modest levels of physical activity (taking at least 3,500 steps per day) may prevent diabetes. Based on this work, she plans to

develop an intervention to promote healthy eating. For the past two years, she has been working with the Missouri Breaks Industries Research Inc. in Eagle Butte South Dakota on a project to figure out what types of foods

are sold at the community stores and what factors drive food choices for themselves and their families. She plans on using this information to develop a community-based and culture-centered program to improve diet for American Indians with type 2 diabetes. During her free time, Mandy likes to cook, knit, and spend time with her five-month old son.



A Recipe from Dr. Fretts - Healthy Eating!

Homemade Cinnamon-Raisin Granola

Ingredients:

4 cups old-fashioned oats

1 cup flaked coconut

¼ cup packed brown sugar

¼ cup canola oil

¼ cup honey

1 teaspoon ground cinnamon

1 ½ teaspoons vanilla extract

1 cup raisins

1. Preheat oven to 350 degrees.
2. In a large bowl, combine oats and coconut; set aside.
3. In a saucepan, combine the brown sugar, oil, honey, and cinnamon; bring to a boil. Remove from the heat.
4. Stir in vanilla extract.
5. Pour saucepan contents over oat mixture; stir to coat.
6. Spread in a large shallow baking pan.
7. Bake in oven for 15-20 minutes, stirring occasionally.
8. Take out of oven and cool.
9. Add raisins, and store in an airtight container.

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RHYTHM AND TIMING EXERCISES

The Strong Heart Study has shown higher rates of heart disease in American Indian communities compared to other racial and ethnic groups. The stroke rate is also very high in this population, more than twice that of the general population. In addition, American Indians experience stroke at a younger age than the general U.S. population. The impact on American Indian elders from stroke and related diseases can range from mild mental function problems, depression, and imbalance, to memory loss.

Dr. Steven Verney from the University of New Mexico has developed an intervention study to improve mental function for American Indian elders who suffer from the effects of stroke and related diseases. Rhythm and Timing Exercises have demonstrated a positive impact on thinking, depression, speech, balance and general well being in other populations affected by brain trauma. Rhythm and Timing Exercises include simple movements in time with a set beat. The use of rhythm and timing is harmonious with the cultural tradition of drumming and song in the Native American communities. We hope to better under-

stand the impact of these traditions on the health and well-being of American Indian elders. Half of the study participants, what scientists call the control group, will perform exercises using stretch bands over the same period of time. Those participants will have the opportunity to try the Rhythm and Timing Exercises once they've completed their portion of the study.

The study will include participants from the previous "Strong Heart Stroke Study". In addition, other Native Americans between 60 and 80 years old that can walk independently (using a cane or walker, if necessary), can be examined to see if they qualify for the study. The study will begin enrollment in Oklahoma, Dakotas and Arizona late summer of this year.

- Approaches to Improve Mental Function After Stroke**

 - A study will test the impact of *Rhythm and Timing Exercises*, using the tradition of drumming and song in the Native American communities, on the health and well-being of American Indian elders.
 - Enrollment will begin Summer 2017.