

# Strong Heart Study Newsletter

Investigating Cardiovascular Disease in American Indians

Updates for Community Members and Strong Heart Study Participants

Volume 31, Issue 2 Winter 2021

## UNDERSTANDING FACTORS CONTRIBUTING TO COVID-19 IN STRONG HEART COMMUNITIES THROUGH RESEARCH COLLABORATION

The Strong Heart Study (SHS) is one of 14 cohort studies participating in the Collaborative Cohort of Cohorts for COVID-19 Research (C4R). C4R is recognized as a special and important resource to study risk and resilience factors for severe COVID-19 illness, "long COVID," and other impacts of the pandemic.

C4R includes a diverse population of over **47,000 participants** from across the US, including people who might not have easy access to COVID testing or major hospitals. C4R participants have detailed information on their pre-COVID heart, lung, and brain health. C4R is investigating how these pre-COVID health conditions may be related to short- and long-term health effects of COVID.



To date, **over 1,600 SHS participants** have completed at least one C4R questionnaire regarding COVID. **As of January 2022, 31% of SHS participants reported a COVID infection, 7% with a COVID-related hospitalization, and 2% with a COVID-related death**, which was higher compared to other cohorts in C4R. This highlights how COVID-19 has disproportionately affected the American Indian communities. **C4R is committed to understanding the factors that contribute to these disparities so that they can be addressed.**

Meanwhile, 686 participants have provided a finger-prick sample of blood via Dried Blood

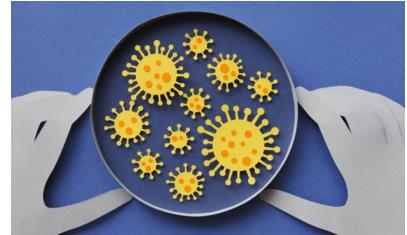
Spot (DBS) cards, which are being analyzed for evidence of antibodies to the virus that causes COVID-19. **So far, over 80% of SHS participants have shown antibodies to COVID-19, which can be due to COVID-19 vaccination or prior infection.** C4R is studying how antibody levels may influence risk of future infections or other COVID-related health effects.

The Principal Investigator of C4R, **Dr. Elizabeth Oelsner from Columbia University, joined the Community Advisory Group (CAG) meeting on January, 13, 2022 to present updates on SHS's critical contributions to C4R.** She was



extremely fortunate to learn from the insightful questions asked by the CAG members, including questions regarding relationships between COVID-19 and diabetes. C4R investigators look forward to returning to the CAG with answers, particularly with respect to how individuals and communities can reduce their risks and, if needed, speed their recovery. The C4R team continues to be impressed by the resilience of the tribal communities and deeply appreciates the contributions and support of SHS and its participants. **Ms.**

**Akshaya Krishnaswamy** helped summarize COVID numbers mentioned in this article.



# FIRST AMERICAN MUSEUM (FAM) IN OKLAHOMA CITY

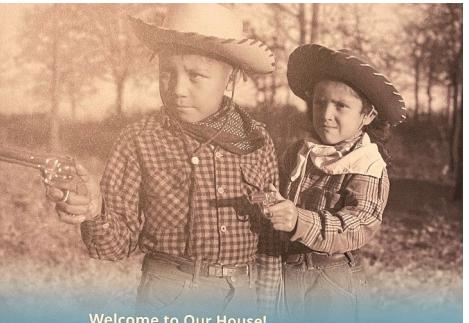
**ONE PLACE, MANY NATIONS** In one place, visitors experience the collective histories of 39 distinctive First American Nations in Oklahoma today. First Americans Museum shares the cultural diversity, history, and contributions of the First Americans.



**OUR NATIONAL STORY** Only a few tribal Nations were indigenous to what is now the State of Oklahoma. All others were removed from homelands across the contiguous U.S. to Indian Territory. In 1907 Oklahoma became the 46th state to enter the union. **The state's name comes from two Choctaw words "Okla" and "Homma" meaning Red People.**



Members of the Strong Heart communities contributed to the design and exhibitions of FAM.



## LOCATION

FAM is located in Oklahoma City, Oklahoma at the Crossroads of America, the confluence on interstates 35, 40, 235 and 44. FAM is positioned along the Oklahoma River across from downtown.



**ADDRESS:** 659 First Americans Blvd, Oklahoma City, OK 73129

**WEBSITE** <https://famok.org>

**TELEPHONE** 405.594.2100

**ADMISSION** Adults (13+) \$10; Tribal, Senior (62+), Military, Student (13+) \$5; Youth (4-12) \$1 child (3 & under) Free; Members Free

## Natalia Etsitty, Arizona Clinical Research Associate



Natalia, a member of the **Navajo Nation**, is the newest member of the Arizona team. Recently, she graduated cum laude from Loyola University

Chicago with a Bachelor of Science in biochemistry. Prior to joining the team, she has

conducted clinical and lab-based research with UChicago, Johns Hopkins Center for American Indian Health, and University of Utah. In addition, she enjoys spending time with family, traveling, and tutoring chemistry.



# Pregnancy Complications in the Strong Heart Study

## An Interview with Dr. Emily Harville

### Why would you study pregnancy complications?

Cardiovascular health is closely linked with pregnancy health. Women who experience pregnancy complications such as high blood pressure or diabetes during pregnancy are more likely to develop hypertension, diabetes, or cardiovascular disease later in life. Pregnancy thus serves as a signal of possible future health issues, as well as an opportunity to identify people who might benefit from interventions.



### What do you want to accomplish in this study?

We aim to examine pregnancy history and how it relates to women's cardiovascular and metabolic health in the Strong Heart Study.

### How are you going to conduct the study?

The project will build on data already collected in the Strong Heart Study. We will review medical records of female participants who reported pre-eclampsia, hypertension during pregnancy, or gestational diabetes, as well as a comparison group of women who did not report these conditions, and determine how pregnancy complications change cardiovascular health.

### Who funded the study?

This project is funded under a **National Institutes of Health** grant to encourage collaborations among states which do not receive large amounts of NIH funding, and expands the SHS circle of collaborators to include **Dr. Emily Harville** from Tulane University in Louisiana.

## Aimee Jones, a Graduate Student in the Center for American Indian Health Research at the University of Oklahoma Health Sciences Center (OUHSC)



Aimee is a member of the Seminole Nation of Oklahoma. She graduated summa cum laude from Oklahoma City University with a Bachelor of Science in Nursing and has been a pediatric RN for almost 3 years. She has previous lab-based research with the Native

American Research Intern program at the University of Utah. Currently, she is obtaining her Master of Public Health at OUHSC Hudson College of Public Health. She plans to continue working with pediatric populations and is interested in maternal, infant, and child health promotion.



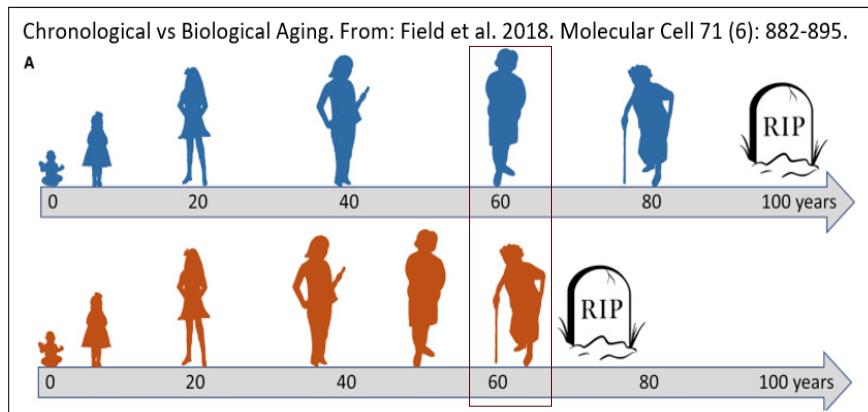
# Healthy Aging: Chronological Age vs. Biological Age

## The importance of healthy aging

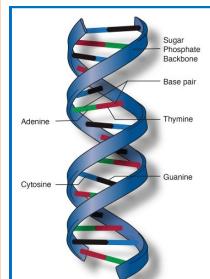
Lifespan is increasing and it is important that the elderly can remain healthy for as long as possible. "Healthy aging" is a term used to describe the process of aging while staying active, eating well, having a good emotional state, and getting appropriate healthcare. However, we know that our environment can impact the risk of aging-related diseases, like diabetes or heart disease. Thus, it is important to understand risk or protective factors of healthy aging.

## Is chronological age the same as biological age?

**Chronological age** measures the years a person has been alive. For example, we may tell people that we are **60 years old**. However, individuals aged 60 may have different health status. **The state of the organs and cells give rise to biological age – or how old the body seems**. People with the same chronological age can have different biological ages.



## How can we measure biological age?



**DNA**, or deoxyribonucleic acid, is the **building blocks for all human genes**. It provides instructions to every cell in the body. It tells muscle cells to be muscle and brain cells to be brain. DNA is the same in every human cell, how does it instruct both muscle and brain cells? **Epigenetics** provide the instructions on which genes should be on and off so cells can become what they were meant to be. One part of epigenetics is **DNA methylation**, the addition of a small modification to DNA that turns genes on and off. These changes add up over time, making epigenetics ideal to study **biological aging**. **Epigenetic clocks** are developed to estimate a person's biological age and better understand the development of diabetes and heart disease as we age.

## Studying epigenetic clock to identify risk factors of age related diseases

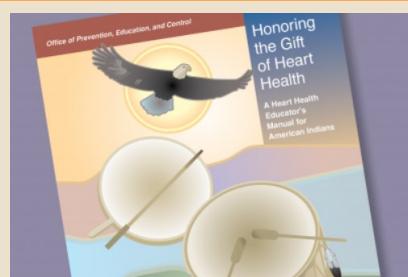
If a person's epigenetic age is greater than their chronological age, then we say they have "**epigenetic age acceleration**". In contrast, if a person's epigenetic age is less than their chronological age, then we say they have "**epigenetic age deceleration**". Lifestyle and other environmental factors can change epigenetic clocks. **Physical activities and healthy foods** are known to decelerate epigenetic age, while **smoking, stress, and pollution** are known to accelerate epigenetic age. Those factors are also related to the risk of heart disease and diabetes. Understanding factors that influence epigenetic age may provide evidence for new prevention and treatment choices of those age related diseases. The Strong Heart Study is collaborating with **Dr. Ana Navas-Acien (Columbia University) and her team** to study epigenetic clocks. This article is a shortened version of **Dr. Allison Kupsco and Ms. Kaila Boyer's** essay about epigenetic clocks.



# Evaluation and Implementation of Honoring the Gift of Heart Health

## What has already been done?

About 20 years ago, the National Heart, Lung, and Blood Institute (NHLBI) developed the *Honoring the Gift of Heart Health* educational program for American Indians. This is a 10-lesson course on heart-health that includes activities, idea starters, picture cards, handouts, and recipes. The NHLBI is interested in updating the current materials to make sure they are relevant and meet the current heart health needs of the communities.



## What our team is studying?

The Strong Heart Study (SHS) team plans to work with the Oklahoma SHS communities to provide recommendations on updating the *Honoring the Gift of Heart Health* educational materials. We also plan to set up a pilot program to see if the materials raise awareness of heart health. We plan to use focus groups and surveys to see how the education program meets the heart health needs of the communities.

## Who can participate?

Groups of people and individual members of tribes and communities that participate in the Strong Heart Study in Oklahoma.

## Why is heart health education important?

Heart disease remains the number one cause of death in all populations across the United States, including American Indians, and heart health education can reduce the risk of heart disease. Information provided by this study will be used to prevent heart disease in American Indians across the United States.

## Interested in participating?

If you think you are eligible and would like to participate, please contact Principal Investigator Dr. Jessica Reese at [Jessica-Reese@ouhsc.edu](mailto:Jessica-Reese@ouhsc.edu) or Ms. Aimee Jones at [Aimee-Jones@ouhsc.edu](mailto:Aimee-Jones@ouhsc.edu).



## Strong Heart Study Virtual Coffee Hour

You are invited to join the Strong Heart Study investigators for 1 or more of the 6 virtual, Saturday Coffee Hour Sessions. Each session will discuss different results from the Strong Heart Study and other research studies. The sessions are scheduled for:

**Saturday mornings at 8:30 PT / 9:30 MT AZ / 10:30 CT**

You can join from your home via ZOOM or by phone

|          |                                                                         |  |
|----------|-------------------------------------------------------------------------|--|
| March 5  | Environment & Your Health   Benjamin Bostick                            |  |
| March 12 | Nutrition & Physical Activity   Amanda Fretts                           |  |
| March 19 | Why We Study Genetics   Lyle Best                                       |  |
| March 26 | HPV & Cancer   Naomi Ruth Lee                                           |  |
| April 2  | Preventing Alcohol-exposed Pregnancy   Jessica Hanson & Michelle Sarche |  |
| April 9  | Brain Health   Dr. Astrid Suchy-Dicey                                   |  |

RSVP by March 1st!

The Coffee Hours are hosted by the 3 Strong Heart Study Field Centers. To RSVP or for more information contact your SHS Field Center.

Arizona Center - 602-277-0488 @ STRONGHEARTSTUDY

Dakota Center - 605-230-1507 @ SHSDAKOTACENTER

Oklahoma Center - 405-271-3090 Extension 6 @ SHSOKLAHOMACENTER

For more information on the Strong Heart Study go to: <https://strongheartstudy.org/>



STRONG HEART STUDY COORDINATING CENTER  
University of Oklahoma Health Sciences Center  
Center for American Indian Health Research  
College of Public Health  
P.O. Box 26901  
Oklahoma City, OK 73126-0901

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## Kanuchi

A rich and creamy nut soup of Cherokee origin, **kanuchi** has few ingredients but a world of deep nutty flavor.

### Ingredients

- 12 ounces (340g) raw shelled hickory nuts or pecans
- 1 teaspoon kosher salt, plus more as needed
- 1 tablespoon maple syrup
- 1 cup cooked and drained whole or cracked hominy, or 1 large sweet potato (1 pound 6 ounces; 625g), peeled, cut into 1/2-inch dice, and roasted



### Directions

1. In a food processor, process nuts, scraping down sides once or twice during processing, until they form a thick paste, about 3 minutes. Scrape nut paste into a medium bowl.
2. Divide paste into 3 even portions. You only need one portion to make this recipe; you can save the rest for future batches or use it as a nut butter in other preparations.
3. Transfer one portion of nut paste to a 3-quart saucepan and add 1 quart (1 liter) cold water along with the 1 teaspoon kosher salt. Set over high heat and bring to a boil, whisking to incorporate nut paste. Reduce heat to maintain a simmer and cook uncovered, stirring occasionally, until reduced by half, about 30 minutes.
4. Add maple syrup, then increase heat to high, allowing soup to boil until any separated fats on the surface have emulsified back into the soup. Taste, adding more salt if desired.
5. To serve, briefly reheat hominy or sweet potato. Ladle hot soup into bowls and garnish with hominy or sweet potato. (<https://www.serioouseats.com/kanuchi-cherokee-pureed-nut-soup>)