

Amish Research Clinic

2024 Annual Newsletter



UNIVERSITY of MARYLAND
SCHOOL OF MEDICINE

Greetings from the Amish Research Clinic!

Research at the ARC has led to many exciting insights important for the health of the Amish and the general population. Among these are:

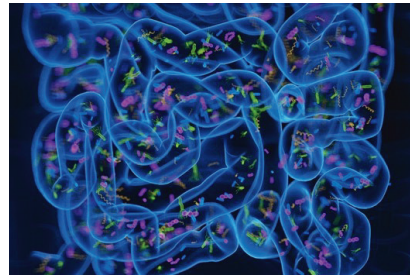
- ◇ A variant (gene change) identified in the Amish helped point to a new therapy to lower triglyceride levels and reduce heart disease risk.
- ◇ Amish have lower rates of diabetes and hypertension than the general population, suggesting a health benefit of the Amish lifestyle.
- ◇ A commonly prescribed class of diabetes drugs (SGLT2 inhibitors) have undesired side effects on bone health. Our research in the Amish population suggests that vitamin D supplements can decrease the rate of bone fractures in patients taking SGLT2 inhibitor drugs.
- ◇ Recent research has identified important limitations in current approaches to diagnosing vitamin D deficiency. Our research in the Amish population has suggested a new and improved approach to diagnose vitamin D deficiency and to monitor the response to vitamin D supplements.

Read on, there's more!

New Study Coming

Microbiome Study

Our clinic has a new study that will look at gut health in participants. Our intestines are home to hundreds of unique strains of bacteria and microbes (the human microbiome), many of which have specific functions. Recent research has shown that some of those bacteria in the microbiome play a major role in our whole body's health, and changes in the make-up of the microbiome have been linked to different disorders. We will collect a stool sample from each participant to understand more about healthy human gut microbiome. We hope to find ways to use those bacteria to create new medicines.



ARC Amish Liaison Team:

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Emma Beiler
Esther Smucker
Hanna King

Kate Kauffman
Katie King
Lavina Ebersol
Malinda Zook
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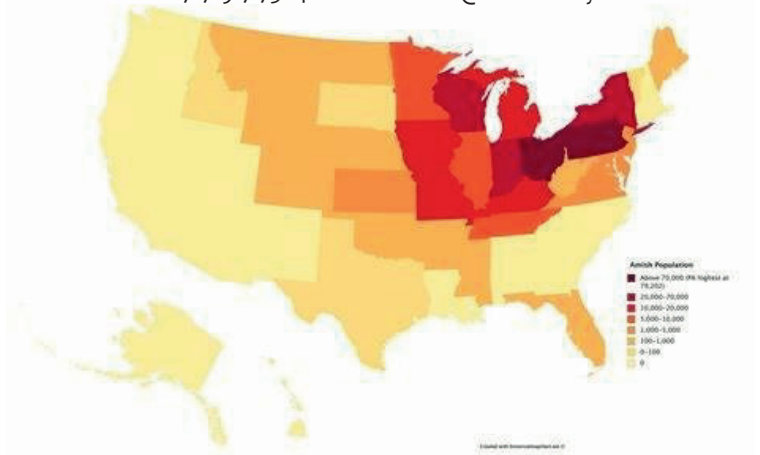
Susie Fisher
Susie Stoltzfus
Sylvia King
Verna Fisher
Verna Petersheim

Current Studies

New Wellness Study - Genetic Diversity in Plain Populations

This study serves as the basis for many of the other studies done at the ARC. Researchers are looking for gene changes in conditions that are common to many people. They hope to learn how the genetic changes might impact health with the ultimate goal of improving health care. This year, we plan to expand the study by traveling to areas of Pennsylvania outside of Lancaster County. Anyone 18 years or older and of Anabaptist ancestry who has not previously participated in this study is eligible to participate. The study is typically done in one visit at the home of the participant, or a centrally located site, and takes about an hour. Participants will sign a consent form, answer questions about their health and family history, have blood pressure, heart rate and body measurements taken, and blood will be drawn. The blood work checks glucose level, diabetes risk, cholesterol levels, thyroid, heart, liver and kidney function, and a complete blood cell count. Participants will receive the blood work results along with a basic wellness summary based on the data collected at the study visit. There is no cost for the results. Participants are contributing to our research, which keeps the work moving forward.

If you are interested in more information or would like to schedule an appointment, please contact Leslie Drummond at 717-917-7304 or ldrummond@som.umaryland.edu.



Amish Research Clinic Team:

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Grace Redcay
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Current Studies, cont'd

DISC (Direct-Indirect Screening Comparison) Study

The DISC study started in 2023, focused on learning how families prefer to share important disease-risk information with relatives. We are studying hereditary high cholesterol and long QT syndrome (a heart rhythm disorder), both very common in the Amish. When one person is affected with one of these conditions, there's a 50% chance for other close blood relatives to be affected. Community members who have already been identified with hereditary high cholesterol or long QT syndrome through prior ARC research are sent invitation letters. Those who enroll receive education about their condition, cholesterol checks or EKGs, and are connected to local healthcare providers. We discuss how to share the information with family members who may be at risk. The study is

designed so that some individuals are provided information to share on their own, while for others we directly contact relatives on the participant's behalf. Either way, interested family members can enroll and get tested to learn whether they have the condition running in their family. The great news is that very effective treatment exists for both conditions! We hope to learn more about these conditions, aid in family communication about the risk, and coordinate testing and follow-up for those diagnosed.



Amish Aging Study

As we get older, we become more prone to age-related diseases. In the Aging study, we will be comparing blood and skin cells from healthy 20 years olds up to 80-year-olds to learn more about the aging process. The knowledge that

we gain from studying those participants can help develop new treatments for age-related diseases. This study takes less than an hour of your time and is done early mornings on various days Monday through Thursday. Please consider volunteering for the Aging study.



Umbrella Study

Genetic studies of multiple Plain populations over the past 30 years have identified many genetic changes (variants) affecting health and disease. In fact, some of these variants reduce disease risk and improve health. We want to understand more about these, so we are studying eight specific variants with the hope that what we learn may help to devise preventative medications or treatments for persons with higher risk of particular diseases. Because we've combined genetic results from various studies through our collaboration with the Regeneron Genetics Center, we call this our Umbrella Study – results under one umbrella.

Here are more exciting insights derived through ARC research:

- ◇ About 31% of individuals are resistant to a commonly prescribed drug that patients take after having heart surgery to prevent blood clotting (clopidogrel). These patients should take higher doses of the drug or switch to a different drug.
- ◇ Approximately 2-4% of people may be more sensitive to heart attack medications (like clopidogrel) that prevent blood clotting. While this may be beneficial for preventing future heart attacks, it may also lead to greater risk of bleeding-related complications.

PORT Study

The PORT Study is being conducted to study the effects of the FDA-approved medication *semaglutide* (Ozempic) and how it influences blood sugar levels of healthy, non-diabetic, overweight people. The study also attempts to understand how medication may be influenced by a person's genes. Some current participants say they participate so they can help their family and community. Others want to help advance science to develop better treatments for diabetes. The study takes place over seven weeks and participants may also see some weight loss.



University of Maryland Team:

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Seth Ament, PhD

Simeon Taylor, MD

Toni Pollin, PhD

Current Studies, cont'd

Brain Body Connection-L Study (Part 2)

The “L” in BBC-L stands for longitudinal or over time. Part 2 of the successful Brain Body Connection study looks again at the brains and brain function of participants who previously took part in the earlier section of the study. Specifically, we’re looking at brain health and blood vessel health in the brain, trying to see and understand changes over time. We want to increase our understanding of changes that may be related to the development of brain illnesses, taking into account genetics, stress, and environmental factors.

As before, the study uses MRI imaging of the brain along with a series of questions about health topics and mental health, some tests that assess brain function, and some that measure blood vessel health.

We appreciate that the community remains very supportive of the BBC-L study as the ARC and the Maryland Psychiatric Research Center (MPRC) continue to invite back previous

participants who completed the MRI before for this new, expanded study. This section will conclude in one year; during that time new participants may also be invited.

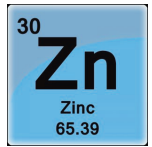


More important insights derived through ARC research:

- ◇ High levels of physical activity can moderate weight gain in people who are genetically predisposed to being overweight.
- ◇ 14% of all Amish have a variant (gene change) in the APOB gene that causes high cholesterol, putting them at higher risk for a heart attack or stroke. Screening for this variant is available for people who want to consider ways to lower their cholesterol.
- ◇ ARC studies have helped to identify specific genes that cause severe diseases in the Amish for which the Clinic for Special Children can now diagnose using its Plain Insight Panel (PIP).

Zinc Supplementation Study

Our Zinc study just began this spring. It will help improve our understanding of the role that Zinc supplementation plays in preventing or slowing the progression of prediabetes and diabetes, one of the most common diseases in the United States. Diabetes contributes to other disorders including kidney, eye, nerve and heart problems. Prediabetes, or having increased amounts of glucose (sugar) in the blood, usually develops before most people are diagnosed with diabetes. We are inviting participants of past studies whose bloodwork may have shown risk factors for or actual markers of prediabetes to participate in this study. They'll take either a low-dose Zinc supplement or a placebo (looks the same but contains no medicine) for one year, and we'll study their health initially, at 6 months and at 12 months. We hope to learn whether a dietary supplement can actually reduce the risk of diabetes.



Donation Message

The Amish Research Clinic, a nonprofit organization serving the community since 1995, extends our heartfelt gratitude to our generous supporters. Your past contributions have enabled us to make significant strides in medical research. With your continued support, we can expand our work here and to other plain communities. Your Donations at Work:

Essential Operating Expenses: Your contributions help cover various operating costs, ensuring the smooth functioning of the ARC – from equipment maintenance and computers to lab supplies, including a mini centrifuge.

New Transport Van: Our fleet of vans, used to transport participants to the clinic and to make home visits, log many miles. It's nearly time to replace another one with a newer, more efficient model, ensuring safe and reliable travel.

Genetic Confirmation and Counseling: Your support enables us to provide genetic confirmation and counseling, helping to identify illnesses that hurt us and our families.

Your freewill donations play a vital role in sustaining our mission: Contributing to improvements in healthcare through research and serving as a resource for health information and knowledge to the Plain Community. Based on the needs for the clinic this year and looking to the future, we have set a goal of \$10,000, which is reachable based on past responses. Together we can make a lasting impact on health and well-being. Thank you for your consideration of a gift this year.

Checks can be made payable to the University of Maryland Baltimore Foundation/Amish Clinic (or UMBF/Amish Clinic), which administers gifts for the University of Maryland Amish Research Clinic. Kindly send your annual donation to:

University of Maryland School of Medicine
Office of Development
31 South Greene Street, Third Floor
Baltimore, MD 21201
Attn: Traci Morgan

Alternatively, you may donate online at: www.medschool.umaryland.edu/AmishClinicGift

If you have any questions, please call Kimberle Morton at 443.851.4124

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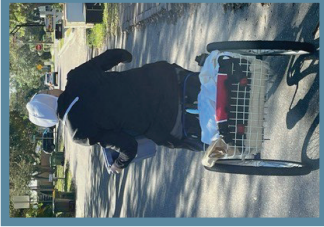
Phone #: (717) 392-4948

Our Mission

The Amish Research Clinic contributes to improvements in healthcare through research. We serve as a resource for health information and knowledge to the Amish Community.

Studies from the Amish Research Program have been described in over 350 publications. These can be viewed on this website:

[https://
www.ncbi.nlm.nih.
gov/sites/myncbi/
braxton.mitchell.1/
collections](https://www.ncbi.nlm.nih.gov/sites/myncbi/braxton.mitchell.1/collections)



The Amish Research
Clinic in Pinecraft
By K. Palmer