Informed Consent Form

Title: Measurements of Lipoproteins, Apolipoproteins, and Lipids – Determination of pre-analytical variables in blood collected from fasting and post-prandial subjects

NCT Number: NCT03948295

IRB Approval Date: December 4, 2019

You Are Being Asked to Be in a Research Study

What Is a Research Study?

The main purpose of research studies is to gain knowledge. This knowledge may be used to help others. Research studies are not intended to benefit you directly, though some might.

Do I Have to Do This?

No. Being in this study is entirely your choice. If you decide to join this study, you can change your mind later on and withdraw from the research study.

Taking part in a study is separate from medical care. The decision to join or not join the research study will not affect your status as a patient.

What Is This Document?

This form is an informed consent document. It will describe the study risks, procedures, and any costs to you.

This form is also a HIPAA Authorization document. It will describe how your health information will be used and by whom.

Signing this form indicates you are willing to take part in the study and allow your health information to be used.

What Should I Do Next?

1. Read this form, or have it read to you.
2. Make sure the study doctor or study staff explains the study to you.
3. Ask questions (e.g., time commitment, unfamiliar words, specific procedures, etc.)
4. If there will be medical treatment, know which parts are research and which are standard care.
5. Take time to consider this, and talk about it with your family and friends.

Emory University
Consent to be a Research Subject / HIPAA Authorization

Title: Measurements of Lipoproteins, Apolipoproteins, and Lipids – Determination of pre-analytical variables in blood collected from fasting and post-prandial subjects

Principal Investigator: Thomas R. Ziegler

Sponsor: The Clinical Chemistry Branch in the Division of Laboratory Sciences at the Center for Disease Control and Prevention

Introduction
You are being asked to be in a medical research study. This form is designed to tell you everything you need to think about before you decide if you want to be a part of the study. **It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study.** The decision to join or not join the research study will not cause you to lose any medical benefits. If you decide not to take part in this study, your doctor will continue to treat you.

Before making your decision:
- Please carefully read this form or have it read to you
- Please listen to the study doctor or study staff explain the study to you
- Please ask questions about anything that is not clear

You can take a copy of this consent form, to keep. Feel free to take your time thinking about whether you would like to participate. You may wish to discuss your decision with family or friends. Do not sign this consent form unless you have had a chance to ask questions and get answers that make sense to you. By signing this form you will not give up any legal rights.

What is the purpose of this study?
For several decades, lipid panels have been the standard method for assessing cardiovascular disease (CVD) risk. Lipid panels can measure total cholesterol, triglyceride levels, and amounts of high density lipoproteins (HDL) and low density lipoproteins (LDL) in the blood. These measurements are used to determine CVD risk based on whether the values fall outside or within certain rangers.

However, CVD risk can still be tricky to estimate. For example, recent studies have found that many people still suffer from CVD symptoms even with normal levels of total cholesterol and LDL. Some people also experience coronary events even if they had successfully undergone lipid-lowering treatments. To understand these cases, , the Clinical Chemistry Branch (CCB) in the Division of Laboratory Sciences (DLS) at the Center for Disease Control and Prevention (CDC) is developing a new advanced lipid testing (ALT) method. The new method can measure a wider array of biomarkers that may be predictive for cardiovascular events.

Before the CCB's ALT method can be used as a predictive tool, the CDC needs to further examine the effect of food consumption on blood lipid test results. The goal of this current study is to study the relative effect of a high fat meal challenge on people who have normal body weight or who are overweight. Blood will be drawn over the course of 6 hours and analyzed at the CDC for a wide panel of blood lipids.

What will I be asked to do?

If you agree to participate in the study, we will schedule a study visit for you at the Emory Clinical Research Center (CRC). Starting from 10pm the night before the study visit, we ask that you fast overnight. You may drink water during this time, but avoid sugary drinks and any snacks.

When you arrive at the Emory CRC, we will give you a paper consent form to sign to confirm your participation in the study. If you agree, you will receive a medical examination from a physician and have your vital signs, weight, and height measured. We will then ask you to provide a urine sample. This urine will be used to measure oxidative stress markers. If you are a woman of child-bearing potential, the urine will also be used to perform a pregnancy test for safety purposes. If you are pregnant, you cannot participate in the study procedures.

Afterwards, we will start the lipid challenge, which will takes place over the course of six hours. Approximately 20.5 mL of blood will be drawn from a peripheral vein. This will be repeated at 30 minutes, 1 hour, 2 hours, 4 hours, and 6 hours from the first blood draw. Approximately 123 mL or 8.5 tablespoons of blood will be obtained during the entire study.

Specific Study Procedure Details:

Lipid Challenge: An intravenous peripherally inserted venous catheter will be placed into your arm and approximately 15 mL of blood will be withdrawn. You will then be given 100 gram high fat beverage called Calogen to consume. Calogen is a triglyceride emulsion. Blood will be drawn again at 30 minutes, 1 hour, 2 hour, 4 hour, and 6 hours. During the lipid challenge, you may only drink water and you must avoid physical exertion.

Body composition: We will measure how much bone, fat, and muscle are in your whole body with a special scanning machine called a DXA. This is a painless and very safe exam. During the exam, you will lie flat on your back, breathe normally and rest comfortably. The scan will take about 10 minutes. DXA will be for research purposes only. We will also measure your height and weight.

Urine collection: We will ask you to provide urine in a cup. We will measure markers of oxidative stress in your urine. If you are female we will also use this urine to make sure you are not pregnant.

Pregnancy test: If you are a women of child-bearing age and may become pregnant, a urine pregnancy will be performed in the research unit

Who owns my study information and samples?

If you join this study, you will be donating your samples and study information. You will not receive any compensation if your samples or information are used to make a new product. If you withdraw from the study, data and samples that were already collected from you will be destroyed.

What are the possible risks and discomforts?

Lipid Challenge: Calogen is a commercially available liquid high-energy long chain triglyceride fat emulsion which provides 50 grams of long chain triglycerides per 100 mL. It is used to fortify foods. If you happen to have a low tolerance for calogen, you may experience gastrointestinal symptoms such as diarrhea.

The lipid challenge also requires you to avoid physical activity for the 6 hours of the study.

Venipuncture: There is some minor discomfort and risk of mild bruising during venipuncture. Standard sterile techniques will be used during phlebotomy; thus, infection is unlikely. Disposable pre-sterilized needles and syringes will

be used for all blood drawing in this study; needles and syringes will not be reused. Discomforts associated with venipuncture are rapidly reversible.

DXA: DXA involves exposure to small amounts of radiation. The radiation dose is equal to or less than the amount of background radiation received in a round-trip flight from New York to Los Angeles or the natural environmental radiation the average person receives in the United States annually. The risk from radiation exposure of this magnitude is considered to be negligible when compared to everyday risks. DXA also involves specific positioning of the subject on the DXA machine table for determination of VAT compartment measurements by the technician.

Other: The fixed timing of procedures or positioning on the DXA table may be inconvenient to some subjects. Additional risks will be associated with confidentiality issues surrounding the collection/recording of data, but steps will be taken to minimize these risk of a loss of privacy.

Will I benefit directly from the study?

There may be no specific health benefit to your participation in the study. However, you will receive information on your body composition, which you can use to inform your own health decisions and activities. If we perform a pregnancy test, you will also be notified of the result. However, you will not receive the results of the blood tests; these tests will be performed for research purposes only.

This study is designed to learn more about lipid metabolism. Although you may not experience any benefits directly, the study results may be used to help others in the future.

Will I be compensated for my time and effort?

You will get $100 to compensate you for your time and effort.

What are my other options?

Participation in this study is voluntary. You are free not to participate in this study, or to withdraw your participation at any time. Your decision to participate or not participate in this study will in no way affect your current or future medical treatment. Should you wish to withdraw once you have already donated samples, simply notify Dr. Thomas Ziegler at [redacted] or email [redacted]. Similarly, you do not have to agree to participate in any follow-up activities that may be asked of you at a later time.

How will you protect my private information that you collect in this study?

Whenever possible, a study number, rather than your name, will be used on study records. Your name and other identifying information will not appear when we present or publish the study results. All information and materials will be obtained for research purposes only, and the data will be kept in strict confidence for use in this proposed research only. All paper records related to you will be kept in locked file cabinets only accessible to the study team, while any electronic data will be encrypted in a protected database. The data will only be available to the PI and the study team. No information will be given to anyone without your permission. We will ask you to sign an additional consent form if you agree to let us store your research samples from this study for use in future studies.

Storing and Sharing your Information

De-identified data from this study maybe placed into public databases where, in addition to having no direct identifiers, researchers will need to sign data use agreements before accessing the data. We will remove or code any personal information that could identify you before your information is shared. This will ensure that, by current scientific standards and known methods, it is extremely unlikely that anyone would be able to identify you from the information we share. Despite these measures, we cannot guarantee anonymity of your personal data.

Your data and specimens from this study may be useful for other research being done by investigators at Emory or elsewhere. To help further science, we may provide your deidentified data and/or specimens to other researchers. If we do, we will not include any information that could identify you. If your data or specimens are labeled with your study ID, we will not allow the other investigators to link that ID to your identifiable information.

Incidental Findings - DXA

You will be getting a DXA scan for research purposes only. The research does not require health professionals to read the scan. The researchers are not qualified to interpret the images for healthcare purposes. Do not rely on the scan for clinical or diagnostic purposes. However, if the researchers have a question about something they see on the scan they will tell you, and ask you if you want the scan sent to a qualified health professional for review and any further medical treatment. You or your insurance company may have to pay for the review and any such treatment.

Medical Record

If you have been an Emory Healthcare patient before, then you already have an Emory Healthcare medical record. If you have never been an Emory Healthcare patient, you do not have one. An Emory Healthcare medical record will be made for you if an Emory provider or facility gives you any services or procedures for this study. Copies of the consent form/HIPAA authorization that you sign will be put in any Emory Healthcare medical record you have now or any time during the study.

The results of some study tests and procedures will be used only for research purposes and will *not* be placed in your medical record. For this study, those items include:

- Blood values, such as insulin and glucose levels and urine tests for metabolites
- DXA scan results
- Metabolomic data

Tests and procedures done at non-Emory places may not become part of your Emory medical record. Also, if you decide to be in this study, it is up to you to let your other health providers know.

In Case of Injury

If you believe you have become ill or injured from this research, you should contact Dr. Ziegler at telephone number ([redacted] You should also let any health care provider who treats you know that you are in a research study.

If you get ill or injured from being in the study, Emory will help you to get medical treatment. Neither Emory nor the sponsor will pay for your medical treatment. Your insurer will be billed for your treatment costs. If you do not have insurance, or if your insurance does not pay, then you will have to pay these costs.

Emory and the sponsor have not, however, set aside any money to pay you if you are injured as a result of being in this study or to pay for this medical treatment. For Emory, the only exception is if it is proven that your injury or illness is directly caused by the negligence of an Emory employee. “Negligence” is the failure to follow a standard duty of care. You do not give up any legal rights you may have by being in this study, including any right to bring a claim for negligence.

Costs

There will be no costs to you for participating in this study, other than basic expenses like transportation. You will not be charged for any of the research activities. If the study procedures result in any medical complications that would not fall under “injury” as discussed above, the cost of treatment for those complications may be charged to you or your insurance.

Withdrawal from the Study
You have the right to leave a study at any time without penalty. The researchers also have the right to stop your participation in this study without your consent for any reason, especially if they believe it is in your best interest or if you were to object to any future changes that may be made in the study plan.

Authorization to Use and Disclose Protected Health Information

The privacy of your health information is important to us. We call your health information that identifies you, your "protected health information" or "PHI." To protect your PHI, we will follow federal and state privacy laws, including the Health Insurance Portability and Accountability Act and regulations (HIPAA). We refer to all of these laws as the "Privacy Rules." Here we let you know how we will use and disclose your PHI for the main study and for any optional studies in which you may choose to participate.

Main Study

PHI that Will be Used/Disclosed:
The PHI that we will use or share for the main research study includes:

- Medical information about you including your medical history and present/past medications.
- Results of exams, procedures and tests you have before and during the study.
- Laboratory test results.

Purposes for Which Your PHI Will be Used/Disclosed:
We will use and share your PHI for the conduct and oversight of the research study. We will use and share your PHI to provide you with study related treatment and for payment for such treatment. We will also use and share your PHI to conduct normal business operations. We may share your PHI with other people and places that help us conduct or carry out the study, such as laboratories, data management centers, data monitors, contract research organizations, Institutional Review Boards (IRBs) and other study sites. If you leave the study, we may use your PHI to determine your health, vital status or contact information.

Use and Disclosure of Your Information That is Required by Law:
We will use and disclose your PHI when we are required to do so by law. This includes laws that require us to report child abuse or abuse of elderly or disabled adults.

Authorization to Use PHI is Required to Participate:
By signing this form, you give us permission to use and share your PHI as described in this document. You do not have to sign this form to authorize the use and disclosure of your PHI. If you do not sign this form, then you may not participate in the research study.

People Who will Use/Disclose Your PHI:
The following people and groups will use and disclose your PHI in connection with the research study:

- The Principal Investigator and the research staff will use and disclose your PHI to conduct the study.
- Emory may use and disclose your PHI to run normal business operations.
- The Principal Investigator and research staff will share your PHI with other people and groups to help conduct the study or to provide oversight for the study.

- The National Institutes of Health is the Sponsor of the study. The Sponsor may use and disclose your PHI to make sure the research is done correctly and to collect and analyze the results of the research. The Sponsor may disclose your PHI to other people and groups like study monitors to help conduct the study or to provide oversight for the study.
- The research team and the Sponsor may use and disclose your PHI, including disclosure to insurance carriers to administer payment for subject injury.
- The following people and groups will use your PHI to make sure the research is done correctly and safely:
    - Emory offices that are part of the Human Research Participant Protection Program and those that are involved in study administration and billing. These include the Emory IRB, the Emory Research and Healthcare Compliance Offices, and the Emory Office for Clinical Research.
    - Other researchers and centers that are a part of this study.
    - Government agencies that regulate the research including: Office for Human Research Protections; National Institutes of Health
    - Public health agencies.
    - Research monitors and reviewer.
    - Accreditation agencies.
- Sometimes a Principal Investigator or other researcher moves to a different institution. If this happens, your PHI may be shared with that new institution and their oversight offices. PHI will be shared securely and under a legal agreement to ensure it continues to be used under the terms of this consent and HIPAA authorization.

Optional Storage of Data and Specimens for Future Research:

Authorization for This Use of PHI is Required to Participate in Optional Study, but Not in Main Study:
You do not have to authorize the use and disclosure of your PHI. If you do not authorize the use and disclosure of your PHI for the optional study, then you may not participate in the optional research study. You can still be in the main research study even if you don't participate in the optional study.

People Who Will Use/Disclose Your PHI for Optional Storage and Future Research:
The same people and groups who will use and disclose your PHI for the main study will also do so in connection with the optional storage and future research.

Expiration of Your Authorization
Your PHI will be used until this research study ends.

Revoking Your Authorization
If you sign this form, at any time later you may revoke (take back) your permission to use your information. If you want to do this, you must contact the study team at:

Thomas R. Ziegler, MD
Emory University Hospital
[redacted]

At that point, the researchers would not collect any more of your PHI. But they may use or disclose the information you already gave them so they can follow the law, protect your safety, or make sure that the study was done properly and the data is correct. If you revoke your authorization you will not be able to stay in the main study.

Other Items You Should Know about Your Privacy
Not all people and entities are covered by the Privacy Rules. HIPAA only applies to health care providers, health care payers, and health care clearinghouses. If we disclose your information to people who are not covered by the Privacy Rules, including HIPAA, then your information won't be protected by the Privacy Rules. People who do not have to follow the Privacy rules can use or disclose your information with others without your permission if they are allowed to do so by the laws that cover them.

To maintain the integrity of this research study, you generally will not have access to your PHI related to this research until the study is complete. When the study ends, and at your request, you generally will have access to your PHI that we maintain in a designated record set. A designated record set is data that includes medical information or billing records that your health care providers use to make decisions about you. If it is necessary for your health care, your health information will be provided to your doctor.

We may remove identifying information from your PHI. Once we do this, the remaining information will not be subject to the Privacy Rules. Information without identifiers may be used or disclosed with other people or organizations for purposes besides this study.

Contact Information
Contact Dr. Thomas Ziegler at [redacted]

- if you have any questions about this study or your part in it,
- if you feel you have had a research-related injury or a bad reaction to the supplement or
- if you have questions, concerns or complaints about the research

Contact the Emory Institutional Review Board at 404-712-0720 or 877-503-9797 or irb@emory.edu:

- if you have questions about your rights as a research participant.
- if you have questions, concerns or complaints about the research.
- You may also let the IRB know about your experience as a research participant through our Research Participant Survey at http://www.surveymonkey.com/s/6ZDMW75.

Consent and Authorization

Consent and HIPAA Authorization for Optional Study/Studies:
Please initial below if you opt to participate in and authorize use and disclosure of your PHI in the optional study/studies previously described:

_____Initials

TO BE FILLED OUT BY SUBJECT ONLY

Please **print** your name, **sign**, and **date** below if you agree to be in this research study, and any optional studies you initialed above. By signing this consent and authorization form, you will not give up any of your legal rights. We will give you a copy of the signed form to keep.

_____

Name of Subject

_____ _____

Signature of Subject (18 or older and able to consent) **Date** **Time**

TO BE FILLED OUT BY STUDY TEAM ONLY

_____

Name of Person Conducting Informed Consent Discussion

_____ _____

Signature of Person Conducting Informed Consent Discussion **Date** **Time**