CONSENT FORM

TITLE OF RESEARCH: A Study of Racial Differences in Natriuretic Peptides Response to Glucose Challenge

IRB PROTOCOL NO.: IRB-160801002

INVESTIGATOR: Dr. Pankaj Arora, MD, FAHA

SPONSOR: UAB Division of Cardiology

Purpose of the Research

We are asking you to take part in a research study. Please read this information carefully and feel free to ask questions about anything you do not understand.

The purpose of this study is to find out how natriuretic peptide levels change after a Glucose challenge in African Americans. Natriuretic peptides are hormones made by the heart to keep its structure and function. Natriuretic peptides also help regulate salt and water balance and are involved in the metabolism of fat in the body. In a previous study, we have shown in Caucasians that high-carbohydrate diet in healthy volunteers is linked with a change in natriuretic peptide. People who are overweight have lower levels of natriuretic peptides, and this may increase their risk for certain medical problems, such as high blood pressure.

Following Glucose challenge, levels of a hormone called insulin rise in the blood. Previous research shows that the levels of natriuretic peptides may be linked how much insulin is in the blood. However, it is not known whether or not natriuretic peptide levels change after a Glucose challenge in African Americans.

We will look at whether or not natriuretic peptide levels in the blood change after a Glucose challenge in African Americans, and we will compare natriuretic peptide levels in the blood with Caucasians.

We are asking you to join because you are a healthy participant between the ages of 18-40 who has no history of high blood pressure and no known history of problems with your heart, kidney, or liver. In addition, you are not a woman taking hormonal birth control such as oral contraceptive pills, and you are not taking any medications for diabetes or high blood sugar.

We expect to enroll 20 lean individuals and 20 overweight individuals from African American population and 20 lean and 20 overweight individuals from Caucasians as matched group for this study at University of Alabama at Birmingham.

Explanation of Procedures

If you choose to take part in this study, we will ask you to visit UAB Clinical Research Unit (CRU) clinic, located on 15th floor in Jefferson tower building (625 19th Street S.) for 3 times. After the end of 3rd visit, your participation in the study will be over.

Study Visit #1 (Screening Visit):

The screening visit will take about 2 hours. During this visit, we will perform the following tests and procedures to see if you are able to take part in this study.

At this visit, we will:

- Take your blood pressure three times. If your blood pressure is high (greater than 140/90) at the time of your visit you will not be able to continue in the study.
- Measure your height and weight.
- Complete a questionnaire about past medical history, medications and family medical history.
- Draw 2 ¾ tablespoons of your blood. We will do these tests on your blood: natriuretic peptide levels, a chemistry panel (electrolytes, kidney function, and glucose), complete blood count, liver function panel and neprilysin activity.
- Additional 8 ml or ½ tablespoon of whole blood will be stored from participants who agree to participate in DNA extraction for future cardiovascular studies.
- Additional 2.5 ml or ½ teaspoon of whole blood will be stored from participants who agree to participate in RNA extraction for the current study.
- Ask you for a urine sample (women). Test your urine for pregnancy, if you are a female able to become pregnant. Pregnant women cannot take part in this study.
- Schedule you to meet with a study nutritionist who will ask you about your dietary choices and practices to prepare for the study diet.
- Give you a food log to take home and write down what you eat and drink for the next few days.

The study doctor will review the results of these tests and procedures and tell you if you can be in the study or not. If you cannot join the study, the study doctor will tell you. We will suggest follow-up with your primary care physician if this is the case.

If you can join for the study and decide to continue, we will ask you to eat a special study diet for 3 days prior to the main study visit. The diet will include of 3 meals a day (breakfast, lunch and dinner) and snacks and will be given to you by the UAB CRU. These meals will be given based upon your own food choices with the help of a nutritionist. While you are on this diet, we will ask you not to eat anything that is not given to you by the UAB CRU. We will give the meals to you at no cost. These meals will have all the nutrients required for a healthy diet.

Eligibility

Once eligibility is determined after review of the screening labs by the study investigators, you will be informed about eligibility by phone. If you are found eligible, you will be invited back for the 2nd and 3rd/main study visit. You will be asked for your preferred dates for the 2nd and 3rd study visits. You will be instructed that 3rd visit date should be three days after the 2nd visit.

Study Visit #2

You will be asked to pick up your meals on scheduled date between 8 am to 4 pm from the CRU. It will last about 60 minutes.

We will also ask you not to drink alcohol and caffeine-containing beverages (such as coffee, tea, soft drinks, or energy drinks). We will also ask you not to take part in heavy exercise and not to smoke.

Study Visit #3/main

Three days after 2nd visit, you will come for the 3rd visit. You will be asked to come to the CRU at 7 AM. We will ask you not to eat after midnight on the night prior to the visit. You may drink water and take your medications as you normally do.

When you arrive at the CRU, we will:

- Take your blood pressure three times.
- Take your height, weight, and the distance around your waist and hips.
- Ask you for a urine sample (women). Test your urine for pregnancy, if you are a female able to become pregnant. Pregnant women cannot take part in this study.
- We will place an IV in one of your arms. This IV will be used to draw blood samples for the study. We will draw a blood sample to test for natriuretic peptide levels, insulin, GLP-1 and glucose.
- After 1st blood draw, we will give you a high carbohydrate (75g glucose) drink.
- After this, we will observe you for 8 hours. You will be given water to drink on an hourly basis but will not get any more food until the protocol has ended. The amount of water that you will be given will be given based upon your estimated daily water requirements and how much urine you produce.
- Draw a blood sample every 60 minutes for a total of 9 blood draws. Over the course of the day, we plan to draw 9 1/2 tablespoons of blood.
- During the 8-hour observation period we will also watch your blood pressure every 30 minutes and take your blood oxygen saturation once hourly using a probe placed on one of your fingers. The probe is a small device shaped like a clothespin or paperclip.
- We will give you a regular meal after the observation period (about 3 pm).

Risks and Discomforts

Risks of Blood Draw

You may have a small amount of bleeding or a bruise may develop when the IV line is put in place. Sometimes, a person feels faint or lightheaded when his/her blood is drawn. Rarely an infection can develop; it can be treated. Risk is lowered by keeping skilled person for blood draw.

Risks of Fasting

For the study, you will be asked to fast (no food to eat) for approximately 20 hours-overnight and the day of 3rd/main visit. Long hours of fasting cause hypovolemia (a decreased volume of circulating blood in the body) and can make you dizzy, faint, or irritable.

Potential breach of confidentiality

There is a slight risk that your private health information may be seen by others. But, safety measures will be taken to reduce such a problem.

Risk in food preparation

There is a small risk that food may not be prepared right. People who consume food that is not prepared right may experience nausea, vomiting, or diarrhea. However, the CRU metabolic kitchen follows correct policies and procedures to ensure food safety.

Risks of caffeine, alcohol and/or nicotine withdrawal

1. Caffeine withdrawal: There is a small risk that people who take caffeine regularly, may show withdrawal symptoms like headache, fatigue or drowsiness, depressed mood or irritability, difficulty concentrating, and flulike symptoms such as nausea or muscle pain.
2. Alcohol withdrawal: There is a small risk of alcohol withdrawal in people who take alcohol regularly. They may show mild symptoms such as sleep disturbances and anxiety to severe and life-threatening symptoms such as delirium, hallucinations, and autonomic instability.
3. Nicotine withdrawal: There is a small risk of nicotine withdrawal in people who smock or chew tobacco. They may show intense cravings for nicotine, tingling in the hands and feet, sweating, nausea and intestinal cramping, headaches, coughing, sore throat, insomnia, difficulty concentrating.

Benefits

You will not benefit from taking part in this study. The results of this research study may help our understanding of metabolism and how it relates to the heart.

Alternatives

Your alternative is to not participate in this research study.

Confidentiality

Information obtained about you for this study will be kept confidential to the extent allowed by law. However, research information that identifies you may be shared with the UAB Institutional Review Board (IRB) and others who are responsible for ensuring compliance with laws and regulations related to research, and the Office for Human Research Protections (OHRP). The information from the research may be published for scientific purposes; however, your identity will not be given out.

If any part of this study takes place at University of Alabama Hospital this consent document will be placed in your file at that facility. The document will become part of your medical record chart.

Information relating to this study, including your name, medical record number, date of birth and social security number, may be shared with the billing offices of UAB and UAB Health System affiliated entities so that the costs for clinical services can be appropriately paid for by either the study account or by the patient/patient's insurance.

A federal law, called the Genetic Information Nondiscrimination Act (GINA), generally makes it illegal for health insurance companies, group health plans, and most employers to discriminate against you based on your genetic information. This law generally will protect you in the following ways:

- Health insurance companies and group health plans may not request your genetic information that we get from this research.
- Health insurance companies and group health plans may not use your genetic information when making decisions regarding your eligibility or premiums.
- Employers with 15 or more employees may not use your genetic information that we get from this research when making a decision to hire, promote, or fire you or when setting the terms of your employment.

Be aware that this new federal law does not protect you against genetic discrimination by companies that sell life insurance, disability insurance, or long-term care insurance, nor does it protect you against genetic discrimination by all employers.

Voluntary Participation and Withdrawal

Whether or not you take part in this study is your choice. There will be no penalty if you decide not to be in the study. If you decide not to be in the study, you will not lose any benefits you

are otherwise owed. You are free to withdraw from this research study at any time. Your choice to leave the study will not affect your relationship with this institution.

You may be removed from the study without your consent if the sponsor ends the study, if the study doctor decides it is not in the best interest of your health, or if you are not following the study rules.

If you are a UAB student or employee, taking part in this research is not a part of your UAB class work or duties. You can refuse to enroll, or withdraw after enrolling at any time before the study is over, with no effect on your class standing, grades, or job at UAB. You will not be offered or receive any special consideration if you take part in this research.

Cost of Participation

There will be no cost to you for taking part in this study.

Payment for Participation in Research

You will be paid $25 for screening visit, $10 for 2nd visit and $165 for 3rd visit in about 4 weeks after study visit. Ask the study staff about the method of payment that will be used for this study (e.g., check, direct deposit).

Payment for Research-Related Injuries

UAB has not provided for any payment if you are harmed as a result of taking part in this study. If such harm occurs, treatment will be provided. However, this treatment will not be provided free of charge.

Significant New Findings

You will be told by your doctor or the study staff if new information becomes available that might affect your choice to stay in the study.

Optional Research

Please note: This section of the consent form is about optional research that is being done with people who are taking part in this study. You may take part in this optional research if you want to. You can still be a part of this study even if you say no to take part in any of the optional research.

You can say "yes" or "no" to each of the following studies. Please mark your choice for each study.

Future Contact

We would like your permission to contact you about being in future research projects related cardiovascular and metabolic diseases. Based upon result of this visit and test results, we may contact you by phone or in writing about future studies. You can say no to participate in these studies.

_____I agree to allow you to contact me about other studies

_____I DO NOT agree to allow you to contact me about other studies

Genetic Testing

We would like to request your permission to collect ½ tablespoon of whole blood to extract DNA and store that for future studies. We are not going analyze your DNA study information for this protocol. The DNA that composes of your genes will be analyzed and that data, which is referred to your genotype or complete genetic makeup, compared to your phenotype, which consists of your observable traits, characteristics, and diseases in the future.

There are multiple genes involved in the regulation of human blood pressure. Until recently, no common genetic variants had been found which were related to human blood pressure. A genetic variant is a change in a particular gene that may affect the health of the person who has it. Recently, researchers have discovered a genetic variant which is present in about 1 out of 10 people and is related to blood pressure and to levels of natriuretic peptides.

We may pursue to study these genetic variates in the future. The future research related to these genetic variates may be conducted by Dr. Pankaj Arora or other researchers after the IRB's approval for their research. However, your identity relates to these specimen will be coded and only Dr. Pankaj Arora will have access to it.

The results related to these future studies will not be disclosed to you or your doctor.

Initial your choice below:

_____I agree to allow you to store DNA to test for genetic variants.

_____I DO NOT agree to allow you to store DNA you to test for genetic variants.

Gene Expression

We would like to request your permission to collect ½ teaspoon of whole blood to extract RNA and store that for the current study. The principal role of RNA is to act as a messenger carrying instructions from DNA for controlling the synthesis of proteins. These proteins may work as a

hormone such as natriuretic peptides. By measuring RNA levels, we can quantify genetic activity of certain natriuretic peptide family of genes in whole blood.

Initial your choice below:

_____I agree to allow you to store RNA to test for its expression in the current study.

_____I DO NOT agree to allow you to store RNA to test for its expression in the current study.

Storage of Specimens for Future Use

After we have processed your blood samples for this research study we would like to store any leftover blood at UAB for future research related to cardiovascular and metabolic disease. The future research may be conducted by Dr. Pankaj Arora or by other researchers that obtain IRB approval for their research. The specimens will be labeled with a code that only Dr. Pankaj Arora can link back to you. Results of any future research will not be given to you or your doctor. The specimens obtained from you in this research may help in the development of a future commercial product. There are no plans to provide financial compensation to you should this occur.

You do not have to agree to allow your blood specimens to be stored in order to be part of this study.

You may request at any time that your research samples be removed from storage and not be used for future research. If you decide you want your samples removed, you may contact Nirav Patel at npatel@uabmc.edu or 205-934-6058 or Dr. Pankaj Arora at the University of Alabama at Birmingham at parora@uabmc.edu. Once the request is received, and if your samples have not already been used for other research, they will be destroyed. If you do not make such a request, your specimens will be stored indefinitely or until used.

Initial your choice below:

_____I agree to allow my samples to be kept and used for future research on cardiovascular and metabolic disease.

_____I do not agree to allow my samples to be kept and used for future research.

Questions

If you have any questions, concerns, or complaints about the research or a research-related injury including available treatments, you may contact Nirav Patel and Dr. Pankaj Arora. He will be glad to answer any of your questions. Nirav Patel's number is 205-934-6058 and Dr. Arora's number is 205-936-6630. Nirav Patel may also be paged after hours at 205-435-5866.

If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the UAB Office of the IRB (OIRB) at (205) 934-3789 or toll free at 1-855-860-3789. Regular hours for the OIRB are 8:00 a.m. to 5:00 p.m. CT, Monday through Friday.

Legal Rights

You are not waiving any of your legal rights by signing this informed consent document.

Signatures

Your signature below indicates that you have read (or been read) the information provided above and agree to participate in this study. You will receive a copy of this signed consent form.

Signature of Participant	Date
Signature of Person Obtaining Informed Consent	Date

University of Alabama at Birmingham
AUTHORIZATION FOR USE/DISCLOSURE OF
PROTECTED HEALTH INFORMATION (PHI) FOR RESEARCH

Participant Name:_____ **UAB IRB Protocol Number: IRB-160801002**
Research Protocol: A Study Racial Differences of Natriuretic Peptides Response Glucose Challenge **Principal Investigator: Dr. Pankaj Arora, MD, FAHA**
Sponsor: UAB Division of Cardiology

What is the purpose of this form? You are being asked to sign this form so that UAB may use and release your protected health information for research. Participation in research is voluntary. If you choose to participate in the research, you must sign this form so that your protected health information may be used for the research.

Why do the researchers want my protected health information? The researchers want to use your protected health information as part of the research protocol listed above and as described to you in the informed consent.

What protected health information do the researchers want to use? All medical information, including but not limited to information and/or records of any diagnosis or treatment of disease or condition, which may include sexually transmitted diseases (e.g., HIV, etc.) or communicable diseases, drug/alcohol dependency, etc.; all personal identifiers, including but not limited to your name, social security number, medical record number, date of birth, dates of service, etc.; any past, present, and future history, examinations, laboratory results, imaging studies and reports and treatments of whatever kind, including but not limited to drug/alcohol treatment, psychiatric/psychological treatment; financial/billing information, including but not limited to copies of your medical bills, and any other information related to or collected for use in the research protocol, regardless of whether the information was collected for research or non-research (e.g., treatment) purposes.

Who will disclose, use and/or receive my protected health information? All Individuals/entities listed in the informed consent documents, including but not limited to, the physicians, nurses and staff and others performing services related to the research (whether at UAB or elsewhere); other operating units of UAB, HSF, UAB Highlands, Children's of Alabama, Eye Foundation Hospital, and the Jefferson County Department of Health, as necessary for their operations; the IRB and its staff; the sponsor of the research and its employees and agents, including any CRO; and any outside regulatory agencies, such as the Food and Drug Administration, providing oversight or performing other legal and/or regulatory functions for which access to participant information is required.

How will my protected health information be protected once it is given to others? Your protected health information that is given to the study sponsor will remain private to the extent possible, even though the study sponsor is not required to follow the federal privacy laws. However, once your information is given to other organizations that are not required to follow federal privacy laws, we cannot assure that the information will remain protected.

How long will this Authorization last? Your authorization for the uses and disclosures described in this Authorization does not have an expiration date.

Can I cancel this Authorization? You may cancel this Authorization at any time by notifying the Principal Investigator, in writing, referencing the research protocol and IRB Protocol Number. If you cancel this Authorization, the study doctor and staff will not use any new health information for research. However, researchers may continue to use the protected health information that was provided before you cancelled your authorization.

Can I see my protected health information? You have a right to request to see your protected health information. However, to ensure the scientific integrity of the research, you will not be able to review the research information until after the research protocol has been completed.

Signature of participant:_____ Date: _____

or participant's legally authorized representative:_____ Date: _____

Printed Name of participant's representative: _____

Relationship to the participant: _____