#PBRC _____

CONSENT TO PARTICIPATE IN A RESEARCH STUDY FOR AN ADULT
INFORMED CONSENT - PART I

Title of Study: **The Effects Watermelon Juice Supplementation on Postprandial Vascular Endothelial Function and Blood Flow During Hyperglycemia: A Pilot Study**

Study Sponsor: National Watermelon Promotional Board

- **Why am I being asked to review this form?**
  - You are being asked to take part in a research study. This form is provided so that you may read and understand the reasons why you might or might not want to participate in the research. Your participation is voluntary.
- **What is the purpose, duration, and procedures of this study?**
  - The purpose of this research study is measure if 14 days of watermelon juice compared to a placebo is effective at preventing the decrease in blood flow after high sugar drink.
  - Your expected time in this study will be 45 *days* consisting of 3 study visits.
  - The procedures involved in this study include.
    - 1 Screening visit
    - 2 laboratory visits (Oral glucose challenge with measurement of blood vessel function).
- **What are the possible risks and discomforts?**
  - As a part of this study you will undergo 2 oral glucose tolerance tests (OGTT). There is a possibility of pain, bruising, or infection at the site of the needle insertion for the IV line. Trained personnel minimize this risk. The drink may make cause nausea, vomiting, abdominal bloating, or a headache.
  - A more comprehensive and detailed description of reasonably foreseeable risks to subjects are included later in Section 6 of the informed consent.
- **What are the possible benefits?**
  - We cannot promise any benefits from your being in the study. Your participation may help us gain knowledge that may help people in the future.
- **If you choose not to participate in the study, are there other choices?**
  - You have the choice at any time not to participate in this research study.
  - *If you decide not to participate in this study, your other choices may include: Taking part in another study*

1- Who is doing the study?

Investigator Information:

Principal Investigator: Timothy Allerton PhD, LCEP
504-919-3799

Medical Investigator: Daniel Hsia

24-hr. Emergency Phone Nos.:
(225)-763-2672 (Weekdays 7:00 a.m.-4:30 p.m.)
(225) 765-4644 (After 4:30 p.m. and Weekends)

Sub Investigators: **Brian Irving Ph.D.**
Neil Johannsen Ph.D.
Guillaume Spielmann Ph.D.
Jack Losso Ph.D.

Dr. Timothy Allerton directs this study, which is under the medical supervision of Dr. Daniel Hsia. We expect about 20 people from 1 site will be enrolled in this study. The study will take place over a period of 9 months. Your expected time in this study will be 45 days. This is a Pennington Biomedical Research Center study.

2- Where is the study being conducted?

This study will take place in the vascular and resting metabolism lab located in the gym armory room B11 at the Huey P Long Field House, 112 Long Fieldhouse, Baton Rouge, LA 70802.

3- What is the purpose of this study?

This study is designed to test if consuming a 100% watermelon beverage for 14 days will restore the lowered blood flow to the muscles that occurs when blood sugar is elevated.

4- Who is eligible to participate in the study?

Inclusion Criteria.

1. Capable and willing to give written informed consent and understand inclusion and exclusion criteria.
2. 18-40 years of age

3. BMI between 18-29.9 kg/m^2
4. Willing to allow researchers to draw blood and conduct imaging (DXA) for research purposes.

You may not qualify for this study based on other eligibility criteria not listed. The study coordinator will go over this information in detail.

Exclusion Criteria.

1. Evidence or self-reported history of type 1 or 2 diabetes mellitus
2. Self-reported family history of type 2 diabetes (first degree relative with type 2 diabetes)
3. Evidence or self-report history of deep vein thrombosis, pulmonary embolism, cardiovascular, peripheral vascular, cerebral vascular, pulmonary, or renal disease
4. Allergy to watermelon
5. Use of medication known to influence study outcomes, such as:
    a. Insulin
    b. Anti-diabetics (metformin)
    c. Corticosteroids
    d. Beta-blockers
    e. Anti-coagulates
6. Use of supplements known to influence study outcomes, such as;
    a. Beta-alanine
    b. L-arginine
    c. L-citrulline
7. Active smoking

5- What will happen to you if you take part in the study?

- There will be a screening visit to determine your eligibility. The study will take approximately 45 days to complete. For the screening visit and Study Visits 1 & 2, you will report to the Vascular and Resting Metabolism Lab located in the gym armory room B11 at the Huey P Long Field House.
- **Randomization:** You will be randomly assigned (like flipping a coin) to the 1) Watermelon Juice Group or the 2) Control (Placebo) Group in a crossover design. Crossover design for this study means you will be assigned to the opposite group for the second half of the study that you are assigned in the first half. You nor the study staff will know which of the juices you are getting.
- Upon enrolling in the study, you will be required to consume 500 ml (about 2 cups) of 100% watermelon juice or placebo (flavored like watermelon) juice daily for 14 days. You will drink the juice at the LSU Animal and Food Science Lab Building daily within a pre-determined timeframe. There may be days when you will be provided the juice for a few days to consume at home. For example, on a

Friday, you may be given the pre-portioned juice to consume on Saturday and Sunday and then asked to return Monday for the continued daily juice visits.

- On day 15 (Study Visit 1), you will report to Vascular and Resting Metabolism Lab located in the gym armory room B11 at the Huey P Long Field House for an Oral Glucose Tolerance Test (OGTT) and vascular testing. The visit will be about 4 hours long.
- There will be a 14 day washout period in which there will be no visits.
- Following the 14 day washout, you will begin the 2nd phase of the study, reporting again to the LSU Animal and Food Science Lab Building daily for 14 days. You will consume the opposite of what you consumed for the first half of the study, 100% watermelon juice or placebo juice that is watermelon flavored.
- On day 15 of that period (Study Visit 2), you will have the final OGTT and vascular testing, exactly like the first. This visit will be about 4 hours long.

The following table shows what will happen at each study visit:

Table 1.

	Screening Visit	2 weeks (WMJ or PLA)	Study Visit 1	Washout- 2 weeks	2 weeks WMJ or PLA	Study Visit 2
Informed Consent	X					
Randomization	X					
Height/Weight/BMI	X					
Vital Signs (blood pressure, heart rate)	X					
Questionnaires	X					
DXA	x		x			x
Oral Glucose Challenge			x			x
RMR			x			x
FMD/MVBF			x			x
Blood Draws	x		x			x
Daily trips to drink juice or placebo			x			x

Screening Visit- Approximately 30-45 minutes

<u>Screening Visit</u>- Approximately 30-45 minutes. You will arrive having fasted at least 10 hours (no food) and at least 72 hours without exercise.

At this visit, the informed consent will be explained to you by our study staff. If you choose to sign the informed consent, the following tests and procedures will be performed to determine if you qualify to participate in this research study:

- **Vital signs** (blood pressure, heart rate)
- **Height/Weight measurements** for BMI (Your Body Mass Index (BMI) will be calculated after obtaining your height/weight)
- **Questionnaires:** You will be asked questions about your:
    - Demographics

  - Medical history
  - Medication use
- **Blood Draw**
- **DXA** also called Whole Body Scan GE iDXA (Dual energy x-ray absorptiometry):
  - This scan lasts ~10 minutes
  - This scan measures the amount of bone, muscle, and fat in your body. The scan will be performed using a whole-body scanner. You will be required to wear a hospital gown, to remove all metal-containing objects from your body, and to lie down on the table. You will be carefully positioned on the table, and your legs will be placed together using two Velcro straps. A scanner emitting low energy X-rays and a detector will pass along your body. You will be asked to remain completely still while the scan is in progress. The scan takes approximately ten minutes. This scan is for research purposes only and not for diagnostic treatment.
- **Randomization:** If you qualify for the study after all screening measures have been performed, you will be randomized into one of the two groups.

Study Visits 1 and 2 - Each visit will last approximately 4 hours. You will arrive having fasted at least 10 hours (no food) and at least 72 hours without exercise.
The following tests will be performed at these study visits:

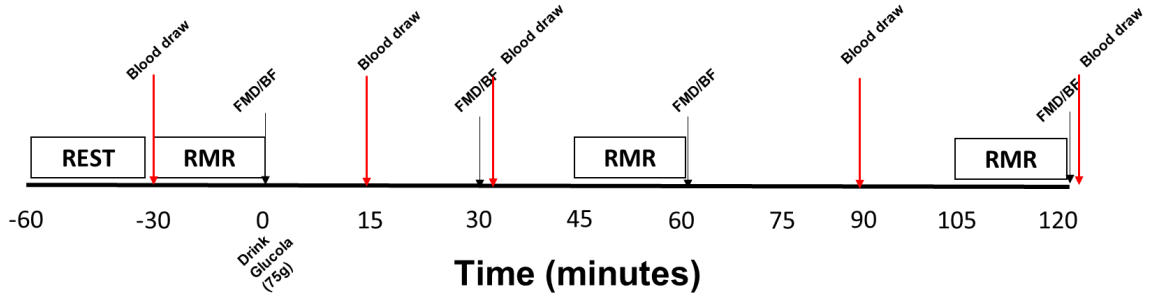
- Body composition will be measured by **DXA**.
- **OGTT** (Oral Glucose Tolerance Test): 3 ½ hours
  - An IV line will be placed in your arm vein for blood draw purposes and will remain there throughout the testing. A blood sample will be drawn, and then you will drink a sugar solution consisting of 75 grams of glucose. Blood will be drawn at specific times after you consume the drink. Each blood sample will be about 1 tablespoon. (6 tablespoons total for the test). **During your IV procedure, a small amount of your own blood (less than 1 teaspoon) will immediately be returned into your vein through the IV after each specimen is collected.**

The following will be performed during the OGTT:

- **RMR** (Resting Metabolic Rate):
  - After you rest for 30 minutes, a clear plastic hood will be placed over your head and chest area. The hood is ventilated with fresh air. Your oxygen intake and carbon dioxide out-put will be measured for 30-45 minutes to

determine how many calories you burn during the time you are being tested.

- Flow-mediated dilation (**FMD**) & Near-infrared Spectroscopy (**NIRS**) for blood flow
    - A blood pressure occlusion cuff will be placed on the wrist. The near-infrared sensors will be taped to the skin on the forearm muscle above the blood pressure cuff. The cuff pressure will be increased to 250-300 mm Hg. This is a similar pressure experienced when blood pressure is measured.



6- What are the possible risks and discomforts?

Blood Draws: There is the possibility of infection and/or pain and bruising at the vein on your arm where the needle is inserted. Aseptic (sterile) technique and trained personnel minimize these risks

OGTT: There is a possibility of pain, bruising, or infection at the site of the needle insertion for the IV line. Trained personnel minimize this risk. The drink may make cause nausea, vomiting, abdominal bloating, or a headache.

Whole Body Scan GE iDXA (Dual energy x-ray absorptiometry)
The amount of radiation used for this procedure is very small. The radiation dose for this scan is equivalent to the radiation you are naturally exposed to in the environment in less than one day. Scans will not be performed on any subject who is pregnant. A urine pregnancy test will be performed within 72 hours before the scan on females of child-bearing potential.

Lifetime radiation exposure: We are exposed to radiation in the environment on a daily basis; however, some scientists have suggested that humans have a lifetime maximum exposure limit. Exposure to radiation is not without risk, but it is difficult to quantify the exact amount someone is exposed to. By participating in this study you will be exposed to radiation that will add to this lifetime maximum exposure limit. If you believe you have been exposed to a significant amount of radiation as part of your

occupation or due to treatment for a specific medical condition, you should notify the study team to discuss whether or not this study would be appropriate for you.

Muscle Blood Flow and Metabolism Measurements: Inflation of the blood pressure cuff around the arm may cause some discomfort and pain during the test. The temporary numbness and tingling are similar to the sensation of having your hand "fall asleep". If the discomfort is too severe, you may stop the test by notifying the technician to stop and the test will be immediately terminated. There is no known risk from the use of skin folds and/or ultrasound to measure your adipose tissue thickness.

Unforeseeable Risks Involving Pregnant Women
If you are pregnant or become pregnant, DXA may involve risks to the embryo or fetus, which are currently unforeseeable.

Interviews/Questionnaires
You do not have to answer any questions you do not want to answer.

Will I be notified if my blood glucose result(s) in an incidental finding?
During a research study, a researcher may notice something that he or she was not looking for. This is called an "incidental" or "unexpected" finding. These incidental findings are not directly related to the research. However, they may show important information about the health of a research volunteer.

Researchers may share some or all of their findings with you. However, you may not learn about any findings for a very long time. If such findings occur, you will be notified by the medical investigator or trained study personnel and referred to a treatment facility for further testing and/or treatment.

Risks: It can be very upsetting to learn unexpected information about your health. This is especially true if you learn that you have or will develop a condition that has no treatment or cure. There is a chance that unexpected findings could affect your family or social relationships, change your family planning decisions, or affect you financially. You might need more tests and procedures to find out what the information really means. It's also possible that the information might be incorrect, so you would worry without cause.

Unknown Risks
In addition to the risks listed above, you may experience a previously unknown risk or side effect.

7- What are the possible benefits?
We cannot promise any benefits from your being in the study.

8- If you do not want to take part in the study, are there other choices?

You have the choice at any time not to participate in this research study. If you choose not to participate, any health benefits to which you are entitled will not be affected in any way. You have the right to take part now and change your mind later on.

9- If you have any questions or problems, whom can you call?

If you have any questions about your rights as a research volunteer, you should call the Institutional Review Board Office at 225-763-2693 or the Executive Director of Pennington Biomedical at 225-763-2513. If you have any questions about the research study, contact Dr. Timothy Allerton at 504-919-3799. If you think you have a research-related injury or medical illness, you should call Dr. Daniel Hsia at (225) 763-2672 during regular working hours. After working hours and on weekends you should call the answering service at 225-765-4644. The on-call physician will respond to your call.

10- What information will be kept private?

Every effort will be made to maintain the confidentiality of your study records. However, someone from the Food and Drug Administration, the Pennington Biomedical Research Center, LSU Department of Kinesiology, and the National Watermelon Promotional Board (the sponsor) may inspect and/or copy the medical records related to the study. Results of the study may be published; however, we will keep your name and other identifying information private. Other than as set forth above, your identity will remain confidential unless disclosure is required by law.

De-identified Information and/or Biospecimens for Future Research

Any personal information that could identify you will be removed from your data and/or biospecimens. Your data and/or biospecimens may be used for future research studies or given to another investigator for future research without asking for your additional permission.

Medicare/Medicaid Mandatory Reporting

If the study sponsor covers costs associated with a study-related injury or medical illness, they will need to know some information about you like your name, date of birth, and Medicare Health Insurance Claim Number, or, if you do not have one, your Social Security Number. This information will be used to check to see if you receive Medicare, and, if you do, report the payment they make to Medicare. The study sponsor will not use this information for any other purpose.

ClinicalTrials.gov

A description of this clinical trial will be available on *http://www.ClinicalTrials.gov,* as required by U.S. Law. This web site will not include information that can identify you. At most, the web site will include a summary of the results. You can search this web site at any time.

Biospecimens and Commercial Profit

Your blood samples may be used to develop new drugs or other products that may result in commercial profit that will not be shared with you.

Whole Genomic Sequencing

Your blood samples that are collected for this research study will not include [whole genomic, germline, somatic, and/or exome sequencing]. This means that the researchers have no plans to look at or try to "read," the protein information that makes up your genes (DNA) from your sample.

11- Can your taking part in the study end early?

Dr. Timothy Allerton, Dr. Daniel Hsia, or the study sponsor can withdraw you from the study for any reason or for no reason. Possible reasons for withdrawal include failure to comply with the study protocol and procedures, the presence or development of a medical condition, or any reason deemed in your best interest by the study principle investigator or medical investigator. The sponsor of the study may also end the study early.

You may withdraw from the study at any time without penalty; however, all data Pennington Biomedical has previously collected cannot be removed from the study.

If your participation in the research ends early because of the investigator or by your choice, termination procedures may need to be completed or follow-up data may need to be obtained to ensure your safety. The study staff will go over the details with you.

12- What if information becomes available that might affect your decision to stay in the study?

Significant New Findings

During the course of this study there may be new findings from this or other research. which may affect your willingness to continue participation. Information concerning any such new findings will be provided to you.

Clinically Relevant Research Results

In this study, you will be informed of any clinically relevant research such as fasting hyperglycemia or impaired glucose tolerance, results, including your individual results, that may be discovered.

13- What charges will you have to pay?

None

14- What payment will you receive?

If you agree to take part, we will compensate you $75 *for completion of the study (Study Visits 1 & 2). If you do not complete the entire study, you will be compensated* $25 *for completion of Study Visit 1. You will not be compensated for the Screening Visit or the daily juice visits.* Your check will be requested from the LSU payroll department when you complete the study or at the appropriate milestone if you are compensated during the course of the study. It usually takes about 3-4 weeks for it to arrive at Pennington Biomedical Research Center.

U.S. citizens, legal resident aliens, and those who have a work eligible visa will need to provide their social security number to receive payment.

You are subject to a 1099 for receiving compensation. Payments in excess of $600 per calendar year are considered taxable income. If you will be paid more than $600, Pennington Biomedical/LSU will report this income to the IRS.

Non-US citizens are subject to having taxes withheld from payment and will need a passport, visa and 1-94 for payment to be processed.

I authorize that all information provided on this Informed Consent form and HIPAA Authorization form, including any and all personal and financial data may be shared with the Internal Revenue Service (IRS) for tax reporting. This data will be securely retained indefinitely.

15- Will you be compensated for a study-related injury or medical illness?

No form of compensation for medical treatment or for other damages (i.e., lost wages, time lost from work, etc.) is available from the Pennington Biomedical Research Center. In the event of injury or medical illness resulting from the research procedures in which you participate, you will be referred to a treatment facility. Medical treatment may be provided at your expense or at the expense of your health care insurer (e.g., Medicare, Medicaid, Blue Cross-Blue Shield, Dental Insurer, etc.) which may or may not provide coverage. The Pennington Biomedical Research Center is a research facility and provides medical treatment only as part of research protocols. Should you require ongoing medical treatments, they must be provided by community physicians and hospitals.

16- Signatures

By signing this consent form, I agree to participate in the study as it is described. The study has been discussed with me and all my questions have been answered. I understand that additional questions regarding the study should be directed to the study investigators. I agree with the terms above and acknowledge that I will be given a copy of this signed consent form.

With my signature, I also acknowledge that I have been given either today or in the past a copy of the Notice of Privacy Practices for Protected Health Information.

_____
Printed Name of Volunteer

_____ _____
Signature of Volunteer Date

Timothy Allerton Ph.D.
Principal Investigator

Daniel Hsia M.D.
Medical Investigator

17- What you need to know about future research with your data, biospecimens or imaging

Your blood samples may be sent to researchers outside of the Pennington Biomedical Research Center. Any personal information that could identify you will be removed before the data, samples or images are shared.

What you should know about your biospecimens:

- The samples will be stored indefinitely.
- If you agree to have your samples stored, you can change your mind later.
- For privacy and confidentiality, your samples will be labeled with a unique series of letters and numbers. Pennington Biomedical will store your samples with this unique identifier and the minimum number of personal identifiers to meet laboratory standards.
- The future research may or may not take place at Pennington Biomedical and may or may not involve Pennington Biomedical Researchers.
- You will not be compensated for any research studies that might be conducted in the future.
- You will not be informed of the details of any specific research studies that might be conducted in the future.
- The collection of samples may give scientists valuable research material that can help them to develop new diagnostic tests, new treatments, and new ways to prevent diseases.
- The research done with your specimens may also help to develop new products in the future, or may be used to establish a cell line or test that could be patented

or licensed. You will not receive any financial compensation for any patents, inventions, or licenses developed from this research.

Blood

If you give permission, approximately 2 teaspoons of blood will be collected and stored by this study. Your stored samples may be tested at Pennington Biomedical Research Center or other locations used in future research. Do you give permission for your blood to be used in future research?

Yes, I give permission _____ _____
Signature Date

No, I do not give permission _____ _____
Signature Date

Withdrawal of Consent

If you decide you would like to withdraw your consent to use your data, biospecimens or imaging, you must provide a written request to have your samples destroyed. In the event you withdraw your consent, it will not be possible to destroy the data, samples or imaging that have already been given to researchers.

For destruction of your data, biospecimens or imaging, you can send a request to the Principal Investigator at:

Timothy Allerton PhD
Pennington Biomedical Research Center
6400 Perkins Road
Baton Rouge, LA 70808