Combined Consent and Authorization to Participate in a Research Study

The activation of brown and beige fat and role in insulin sensitivity

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?

You are being invited to take part in a research study about the effect of Mirabegron (MYRBETRIQ™) and Pioglitazone (ACTOS) on fat tissue.

You are being invited to take part in this research study because you are between the ages of 35 and 65, overweight, have a slightly abnormal blood sugar, evidence of metabolic syndrome, or are in good overall health. If you volunteer to take part in this study, you will be one of about 75 people to do so.

WHO IS DOING THE STUDY?

The person in charge of this study is Philip Kern M.D. of University of Kentucky, Department of Medicine, and Division of Endocrinology. There may be other people on the research team assisting at different times during the study.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to determine whether the amount and activity of brown adipose tissue (BAT) and beige adipose can be increased with the use of Mirabegron or Pioglitazone, alone or in combination. Brown and beige fat are tissues that burn fat and generate heat to help keep you warm. The fat under our skin that surrounds our bodies contains some of this, and areas deep in the body also are brown or beige.

There are a number of factors, including your age, weight, and medical history, that may make you eligible or ineligible to participate in this study. Certain medications that you may be taking could make you ineligible, but if these medications can be safely altered, you may become eligible. Any such changes will be discussed with you and your primary care provider.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

You should not participate in this study if you are pregnant or breastfeeding, if you have a bleeding disorder, or if you have an allergy to the local anesthetic lidocaine. If you are of childbearing potential, you must be using adequate contraception.

You should not participate in this study if you have:

- A history of heart disease
- Cancer or a history of cancer within the last 5 years
- Kidney disease
- Are currently taking steroids or anticoagulants
- A chronic inflammatory condition such as rheumatoid arthritis or inflammatory bowel disease
- A body mass index (BMI) greater than 45
- Diabetes or the chronic use of any antidiabetic medications
- Uncontrolled blood pressure, urinary retention, overactive thyroid
- Significant swelling in your hands, feet, face, arms.
- Are currently taking β-blockers
- Daily use of NSAIDS or other anti-inflammatory drugs (e.g. corticosteroids)
- Are using low-dose aspirin (you will need to discontinue it for 7 days prior to the biopsies)
- Antiplatelet medications or blood thinners (examples: Aspirin, warfarin, Effient®, Plavix)

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research procedures will be conducted at the UK Medical Center at the Center for Clinical Translational Sciences research unit (CCTS). You will need to come to the CCTS Unit for approximately 9 visits, as outlined below. Most of these visits will last between 2 and 8 hours. Visit 5 will last approximately 1 hour. Thus, your total participation will be approximately 9 visits over the next 12 weeks. Should you experience an adverse event it may be necessary to schedule an unscheduled visit to address any health issues that you may be experiencing at that time.

WHAT WILL YOU BE ASKED TO DO?

Pioglitazone is drug approved by the FDA for the treatment of diabetes and Mirabegron is a drug that is approved by the FDA for the treatment of overactive bladder. These drugs are not approved by the FDA for the purposes being studied in this research. Therefore, the way in which we intend to use them in this study is considered investigational.

You will report to the CCTS research unit for baseline testing and repeated procedures. The following tests/procedures are being done for the purpose of the research and are not considered standard of care for your condition.

	Baseline	Pre-Treatment		Treatment and Follow-up					
	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5[a]	Visit 6[b]	Visit 7	Visit 8	Visit 9
					Week 5	Week 10 +/- 7 days			Week 12 +/- 7 days
Consent	X								
Medical History	X				X				
Fasting Lab tests	X				X	X (1 test performed during this time period			
OGTT	X					X(1 test performed during this time period			
Height, Weight and BMI measurements	X	X(1 test performed prior to clamp)			X	X (1 test performed prior to clamp)			
Resting metabolic rate		X (1 test performed during this time period)				X (1 test performed during this time period)			
DEXA Scan		X (1 scan performed during this time period)				X (1 scan performed during this time period)			
Fat & muscle biopsies		X (2 fat biopsies and 1 muscle biopsy performed during this time period, on the same day)				X (2 fat biopsies and 1 muscle biopsy performed during this time period, on the same day)			
Pregnancy testing		X (1 test performed during this time period)				X (1 test performed during this time period)			
Euglycemic Clamp		X (1 clamp performed during this time period)				X (1 clamp performed during this time period)			
PET-CT Scan		X (1 scan performed during this time period)				X (1 scan performed during this time period)			
Randomization				X					
Study Drug dispensing				X	X				

Pill count					X				
Adverse Event	X	X	X	X	X	X	X	X	X

- A = Compliance visit will take place 5 weeks after starting study drug
- B = Follow-up procedures are to begin 10 weeks after starting drug and to be completed within 2 weeks

Study drug. After it has been found that it is safe for you to be in the study, you will be randomized (like the flipping of coin) at Visit 4 to one of three treatment groups. You will stay in your assigned treatment group during your entire participation in the study. You will know which group you are assigned to, but you will not be able to change your assignment. The three groups are:

- Group M: Mirabegron 50 mg/day
- Group P: Pioglitazone 30 mg/day
- Group MP: combination Mirabegron 50 mg/day and Pioglitazone 30 mg/day

Fasting requirements: During a fast you will have nothing to eat after 9 pm the night before you are scheduled to have lab work performed.

Glucose tolerance test and fasting lab tests: This will be a standard oral glucose tolerance test using 75 g of glucose, with blood for glucose and insulin drawn at times 0, 30, 60, 90, and 120 min. This test will determine whether you have impaired glucose tolerance, diabetes, or are normal. We will also draw approximately 2 tablespoons of blood for labs. This fasting blood sample will be used to conduct routine blood tests that are a normal part of a physical exam, such as cholesterol, liver enzymes and electrolytes.

Based on the blood tests, the OGTT, and other measurements, we will determine whether you have impaired glucose tolerance or a normal glucose level, and whether you fit the other criteria of the study. If you meet the criteria of the study, you will be invited to participate in the rest of the study.

Body Mass Index and DXA Scan: You will be asked to have your weight, height, waist and hip measurements recorded. Measurement of total body fat will be performed to determine your percent body fat using dual energy X-ray absorptiometry (DXA). DXA uses very low levels of X-ray to measure the amount of fat, muscle, and bone in different body areas. You will be asked to lie on a table while wearing light clothing or a gown. The test will take only 5 - 10 minutes, and involves no discomfort.

Positron Emission Tomography (PET) Scan: A positron emission tomography (PET) scan is a type of imaging test. It uses a radioactive substance called a tracer to look for high areas of metabolic activity in the body. A PET scan is a standard test performed for certain conditions, and in this instance it is being used to see your brown fat. FDG (2-[18F] fluoro-2-deoxy-D-glucose) is an FDA-approved drug that is injected into the body before a PET scan, and used as a "tracer" to help light up the areas the doctors need to see. We are not studying the effectiveness of this drug in this study.

To see the brown fat, we first need to make you cold. To do this, you will change into loose fitting light clothing, and we will then place around your midsection a special jacket, and cold water will circulate through this jacket for 2 hours. You will feel cold, but it will not be so severe as to make you shiver.

After the first hour in the jacket, you are injected through a vein (IV) with the FDG tracer. The IV needle is most often inserted on the inside of your elbow. The tracer travels through your blood and collects in organs and tissues. This helps the radiologist see certain areas more clearly. You will need to wait as the tracer is absorbed by your body. This takes about 1 hour. During this time, you will be wearing the jacket.

The jacket is then removed, and you will lie on a narrow table that slides into a large tunnel-shaped scanner. The PET detects signals from the tracer. A computer changes the signals into 3D pictures. The images are displayed on a monitor for your health care provider to read. You must lie still during the test. Too much movement can blur images and cause errors.

Resting Metabolic Rate (RMR): Your resting metabolic rate estimates the amount of calories that you burn while at complete rest. To determine your RMR, we will ask you to lie down for 45 minutes. After this, we will ask you to breathe into a box-like structure which will be placed over your head. This allows us to measure the amount of expired oxygen and carbon dioxide. This structure will be over your head for a total of 30 minutes. Fresh air will always flow through the box.

Fat biopsies: After an overnight fast, the biopsy procedures will be performed as follows: A sample of your fat (called a fat biopsy) will be removed by Dr. Kern or one of his associates from an area of your lower abdomen and from your thigh. You will have a total of 4 fat biopsies; two biopsies (one from the abdomen, one from the thigh) at the beginning, and two biopsies (abdomen and thigh) after you have been on the drug treatment. For the abdominal and thigh fat biopsies, the skin at the biopsy sites will be anesthetized using the local anesthetic, lidocaine, then a 1.0 inch incision will be made on your abdomen and a ½ inch incision on our thigh, through the skin and a small amount of fat tissue will be removed. The incisions will then be closed using stitches. This procedure normally takes about 30-45 minutes. After the procedure, you will be provided with a snack. You will have a total of 4 fat biopsies: Two prior to receiving study drug (at any time between visits 2-4) and two while taking the study drug (at any time between visits 6-9).

Muscle biopsy. At the time of the thigh adipose biopsy, a muscle biopsy is performed through the same skin incision. You will have a total of 2 muscle biopsies: 1 prior to receiving study drug (at any time between visits 2-4) and one while taking the study drug (at any time between visits 6-9).

Euglycemic clamp: You will have a measurement of your insulin sensitivity using a clamp study. For this study, you will come to the CCTS after fasting overnight. Two intravenous plastic tubes will be inserted into veins in your arm. You will then be given a constant injection of glucose along with a constant injection of insulin. The glucose and insulin are balanced such that your blood glucose stays constant between about 90-100 mg/dl. Blood will then be drawn from the intravenous line frequently (about every 5-10 minutes) for measurement of blood glucose and insulin. These blood measurements will continue for 4 hours; the total amount of blood that will be withdrawn will be about 100 cc (about 6 tablespoons), which is about one quarter as much as would be taken if you were to donate blood, and then the test is over and you will be provided with a meal.

Urine Collection: If you are female and you are able to get pregnant, you will also be asked to give a sample of urine to see if you are pregnant. If the test results from your urine say that you are pregnant you will not be able to participate in the study.

Pregnancy: If you are capable of becoming pregnant, you must use adequate of birth control for the entire study. You should not become pregnant while in this study because the medicine in this study and the small amount or radiation you will receive from the DEXA scan may affect an unborn baby. Check with the study doctor about methods of birth control to use and how long to use them.

Unscheduled Visits: During the study if you or the study staff believes you should be seen for an extra visit the study staff will arrange for this visit. This visit should take no more than 30 minutes. During this visit we will:

- Review your current medication use, including over the counter medications and herbals
- Ask questions about your health or any problems you may have had since your last visit
- If necessary, take a blood sample (about 1 tablespoon) and urine sample (about 6 teaspoons) to monitor your general health.
- If necessary, perform a ECG and measure your blood pressure and pulse
- If necessary, ask questions about how you've been taking your study medication

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

Drug side effects.

Pioglitazone: The main side effect is fluid retention, or edema. Most people will not notice the edema, although a slight gain of weight (0-5 pounds) is common. In susceptible people with heart disease, this fluid retention from pioglitazone can lead to heart failure. One study found an association of bladder cancer in patients taking pioglitazone, however other studies have not found this association. Long-term use of pioglitazone has been linked to decreased bone mineral density, but a short-term use as described in this study, will have no effects on bone.

Mirabegron: We will be using this drug at the recommended doses of 50 mg. Larger doses (100 mg or more) can cause fast heart beat and high blood pressure. At the 50 mg dose used for this study, there may be small increases in blood pressure, but it is unlikely that this will harm your health.

Although no bad interactions between these two drugs have been reported, it is possible that combining these two drugs could cause you to experience hypoglycemia (low blood sugar).

Fat biopsy: During the biopsy, there will be some discomfort (a burning sensation) while the anesthetic (lidocaine) is being injected. Following completion of the procedure, the site of the biopsy will be mildly tender for a period of 3-4 days. There is also a small chance (less than 1 in 100) that a problem with excessive bleeding or infection of the biopsy site may occur. In case of bleeding, you might need to have the incision site opened to evacuate the blood clot or you might need antibiotics to control the infection. The biopsy could result in a small area of numbness on the skin around the site of the incision.

There will be a permanent scar; the scar from the fat biopsy will be approximately 1 inch in length. You should avoid heavy lifting and strenuous physical activity for two weeks after the biopsy. After this time, you can participate in any activity according to your tolerance. You may take acetaminophen (Tylenol®) after the biopsy. If necessary, the investigators will prescribe other medications for pain.

There is a slight risk that you may have an allergic reaction to local anesthetic lidocaine and experience a rash or itching. If this happens you may be given an antihistamine (Benadryl).

You may experience anaphylaxis. Anaphylaxis is a severe, potentially life-threatening allergic reaction. It can occur within seconds or minutes of exposure to something you are allergic to. Symptoms of an anaphylactic reaction are: drop in blood pressure, difficulty breathing, rapid heartbeat, skin rash, nausea and vomiting, unconsciousness or even death. If you experience any of these symptoms after you leave the clinic, call 911 immediately.

Radiologic procedures and radiation. We all receive a small amount of radiation from our environment, and medical procedures such as X-rays also cause radiation. High amounts of radiation can cause cancer. The amount of radiation you receive is often stated in terms of how it compares to normal environmental exposure.

Tracer: The radiation found in this tracer is gone from your body in about 2 to 10 hours. Rarely, people may have an allergic reaction to the tracer material. Some people have itching, pain, redness, or swelling at the injection site. Please let the study team now immediately if you experience any of these symptoms.

- CT Scan: Each CT scan will give a radiation dose greater than that from typical natural background exposure, but less than the limit for radiation workers and well below the levels that are considered to be a significant risk of any harmful effects.

- PET Scan: The radiation dose from a PET scan procedure is about ½ of the typical nature background radiation dose that we all receive each year. This is well below the levels that are considered to be a significant risk of any harmful effects.

- DEXA Bone Scan: The radiation dose from a typical DEXA bone scan produces approximately 1/300th of the nature background radiation dose we receive each year. This radiation dose would not be considered a risk of producing any harmful effects.

OGTT /clamp measurement of insulin sensitivity: Some discomfort may be present at the sites of needle insertion and catheter location, and there could be some soreness, bruising, pain, bleeding, or fainting. There is a small chance of infection or inflammation around the site of needle insertion. There is a small risk of temporary hypoglycemia (low blood sugar). Although insulin is known to cause a drop in blood sugar if given alone, you will receive insulin along with glucose (sugar), and we will measure your blood sugar repeatedly and feed you or give you glucose if your blood glucose falls. Some people get a mild upset stomach from drinking the sugar water.

Venipuncture. There may be some slight bleeding or bruising at the venipuncture site which may last for a short duration. You may feel faint which will last for a short duration. You may experience some soreness or pain at the site for a few days as well. There is also the slight possibility of infection at the venipuncture site.

Possible Risk/Side Effect	How often has it occurred? (percentage/likelihood)	How serious is it?	Can it be corrected?
Pain, bruising, following biopsies	Pain and bruising, common	Pain: mild-moderate	Yes, pain medications; bruising resolves in 3-10 days
Infection from biopsy	Rare (less than 1:100)	Mild-moderate	Yes, antibiotics
Scar from biopsies	Always	small	It will be permanent
Radiation from DEXA, PET scan	Common	Minimal	It will be part of your overall environmental exposure
Possible infection from IV	Uncommon	Not serious	Yes, with anti-inflammatory medications and/or antibiotics
Upset stomach from sugar water	Uncommon	Not serious	It will get better on its own
Side effects from study medications	Uncommon	Not serious	Yes, stop medication or end of study

There is always a chance that any medical treatment can harm you, and the investigational treatment in this study is no different. In addition to the risks listed above, you may experience a previously unknown risk or side effect.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

There is no guarantee that you will get any personal benefit from taking part in this study. Your willingness to take part may, in the future, help doctors better understand and/or treat others who have your condition.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time

during the study and still keep the benefits and rights you had before volunteering. If you decide not to take part in this study, your decision will have no effect on the quality of medical care you receive.

IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

If you do not want to be in the study, there are no other choices except not to take part in the study. If you have metabolic syndrome, the alternative is to lose weight, exercise, or possibly take medications for glucose or lipids.

WHAT WILL IT COST YOU TO PARTICIPATE?

All of the procedures that are part of this research will be provided at no cost to you, and The University of Kentucky may not be allowed to bill your insurance company, Medicare or Medicaid for the medical procedures done strictly for research. Therefore, these costs will be paid by the research study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

We will make every effort to keep private all research records that identify you to the extent allowed by law. Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be personally identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private. You will be asked to provide your social security number. This is necessary to provide you with payment for participation in the study and is not being collected for actual research purposes. Your social security number will be kept on a separate form and will be destroyed after you receive your payment. If you would rather not provide your social security number you may still take part in the research study but will not be eligible for payment.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. Your personal information (name, address, phone number) will be kept in a paper chart that is stored in a locked filing cabinet. A unique number will be assigned to you. Your data and any data in electronic records will only contain your unique number, and will not contain information that could identify you.

You should know, however, that there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court or to tell authorities if you report information about a child being abused or if you pose a danger to yourself or someone else. Officials of the Food and Drug Administration, the National Institutes of Health, and the University of Kentucky, Center for Clinical and Translation Science may look at or copy pertinent portions of records that identify you.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study. The individuals conducting the study may need to withdraw you from the study. This may occur if you are not able to follow the directions they give you, if they find that the procedures or drug are technically difficult or result in medically unacceptable side effects, or if the agency funding the study decides to stop the study early for a variety of scientific reasons. If you are withdrawn from the study, the data collected up to that point remains in the study database and will not be removed.

ARE YOU PARTICIPATING OR CAN YOU PARTICIPATE IN ANOTHER RESEARCH STUDY AT THE SAME TIME AS PARTICIPATING IN THIS ONE?

You may take part in this study if you are currently involved in another research study, but this depends on the nature of the other study. It is important to let the investigator/your doctor know if you are in another research study. You should also discuss with the investigator before you agree to participate in another research study while you are enrolled in this study.

WHAT HAPPENS IF YOU GET HURT OR SICK DURING THE STUDY?

If you believe you are hurt or if you get sick because of something that is due to the study, you should call Dr. Kern at (859) 323-5821during regular working hours. During evenings or weekends, you should call the University of Kentucky page operator at 859-323-5821 and ask for Dr. Philip Kern, or for the Endocrinology fellow on call. If you are experiencing an emergency, you should call 911.

It is important for you to understand that the University of Kentucky does not have funds set aside to pay for the cost of any care or treatment that might be necessary because you get hurt or sick while taking part in this study. Also, the University of Kentucky will not pay for any wages you may lose if you are harmed by this study.
The medical costs related to your care and treatment because of research related harm will be your responsibility or may be paid by your insurer if you are insured by a health insurance company. Please contact your insurer to determine if they will pay for a research related injury. You do not give up your legal rights by signing this form.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

You will receive a payment for participating in this study as follows:

- $20 for the screening procedures (medical history and glucose tolerance test
- $200 after the first set of procedures (insulin sensitivity testing, resting metabolic rate procedure and the fat and muscle biopsies);
- $500 after taking the study medication for 8 weeks and completing the final study procedures.

The total compensation for completing the study will be $720 provided you undergo the full drug treatment and follow-up procedures. If you receive $600 or above by participating in research, it is potentially reportable for tax purposes.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Dr. Kern at 859-323-5821. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky between the business hours of 8 am and 5 pm EST, Mon-Fri at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

WHAT IF NEW INFORMATION IS LEARNED DURING THE STUDY THAT MIGHT AFFECT YOUR DECISION TO PARTICIPATE?

If the researcher learns of new information in regards to this study, and it might change your willingness to stay in this study, the information will be provided to you. You may be asked to sign a new informed consent form if the information is provided to you after you have joined the study.

POTENTIAL FUTURE USE

Banking of tissue and blood specimens: The investigators (Philip Kern, M.D.) would like to keep some of the unused or leftover blood and tissue samples collected during this study. No additional blood or tissue will be taken. If you agree, the blood and tissue samples will be stored for an indefinite amount of time and may be used in future research related to muscle health and disease. No genetic testing will be performed on your stored samples. Your stored samples/information will not be shared with anyone outside the bank. There is no benefit to you for allowing us to bank your samples/information. There is no risk to you allowing us to bank your samples/information. This is because your name, and other information that could identify you, will not be placed on the stored samples/information. There is no cost to you for participating in the bank and there is no benefit to you for allowing Dr. Kern to store your samples.

Please read the information below and think about your choice. After reading, mark "yes" or "no." If you have questions, please talk to the investigator or staff. Remember, no matter what you decide to do about the storage, and future use of your blood and muscle samples, you may still take part in this study. If you answer yes to either choice below you also give your authorization for your accompanying health information acquired during this study to be used and disclosed along with the blood and tissue samples. Your protected health information such as your name will be de-identified or coded so that others will not know your identity.

1. Do you give permission for your blood and tissue samples to be kept by *Philip Kern, M.D.* in a central location/specimen bank at University of Kentucky, indefinitely or until they are used up for use in future research to learn more about how to prevent, detect, or treat insulin resistance, obesity, metabolic syndrome or diabetes?

   ☐ Yes ☐ No _____Initials

2. Do you give permission for your blood and tissue samples to be used for future research about other health problems, not necessarily related to obesity or diabetes?

   ☐ Yes ☐ No _____Initials

The blood and tissue samples that you are giving will no longer belong to you and might be used in studies that lead to new products for research, diagnosis or treatment. There is no plan to keep you informed of findings from these studies. These products might have some commercial value. There are no plans to provide financial compensation to you should this occur.

Contacting Research Subjects for Future Studies:

Do you give your permission to be contacted in the future by *Philip Kern, M.D.* regarding your willingness to participate in future research studies about how to prevent, detect, or treat insulin resistance, or other studies that may be relevant to you?

☐ Yes ☐ No _____Initials

If you later decide to withdraw your permission for the banking of leftover samples, please contact Philip Kern, M.D.; Wethington 521; 900 S. Limestone St, Lexington KY 40536 and request that your leftover samples be discarded after this protocol is completed.

WHAT ELSE DO YOU NEED TO KNOW?

The National Institute of Diabetes and Digestive and Kidney Diseases (a branch of the National Institutes of Health) is providing funding for this study.

The sample(s) (blood, tissue or fluids) that you are giving might be used in studies that lead to new products for research, diagnosis or treatment. These products might have some commercial value. There are no plans to provide financial compensation to you should this occur.

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 test results. You can search this web site at any time.

AUTHORIZATION TO USE OR DISCLOSE YOUR IDENTIFIABLE HEALTH INFORMATION

The privacy law, HIPAA (Health Insurance Portability and Accountability Act), requires researchers to protect your health information. The following sections of the form describe how researchers may use your health information.

Your health information that may be accessed, used and/or released includes:

- Demographic information (e.g. name, address, phone number, study number, social security number)
- Dates including date of birth, hospital admissions/discharges, dates of medical events, study visits
- Medical history and medication history as it relates to this study
- Results of blood tests, glucose tolerance tests, fat and muscle biopsy, DXA and PET-CT Scans)

The Researchers may use and share your health information with:

- The University of Kentucky's Institutional Review Board/Office of Research Integrity.
- Law enforcement agencies when required by law.
- UK Hospital or University of Kentucky representatives, for purposes of administration of the study (e.g. lab results, payment of compensation).
- UK Investigational Drug Services
- Officials at the funding agency, the National Institutes of Health, if necessary.
- The Food and Drug Administration (FDA), if necessary
- Center for Clinical and Translational Science (CCTS)
- Collaborating physicians and staff, as required for safety purposes.
- If necessary, my primary physician will be contacted if the researcher in the course of the project learns of a medical condition that needs immediate attention.

The researchers agree to only share your health information with the people listed in this document. Should your health information be released to anyone that is not regulated by the privacy law, your health information may be shared with others without your permission; however, the use of your health information would still be regulated by applicable federal and state laws.

You will not be allowed to participate in the research study if you do not sign this form. If you decide not to sign the form, it will not affect your:

- Current or future healthcare at the University of Kentucky
- Current or future payments to the University of Kentucky
- Ability to enroll in any health plans (if applicable)
- Eligibility for benefits (if applicable)

After signing the form, you can change your mind and NOT let the researcher(s) release or use your health information (revoke the Authorization). If you revoke the authorization:

- You will send a written letter to: *Philip Kern, MD; Wethington 521; 900 S. Limestone St, Lexington KY 40536* of your decision.
- Researchers may use and release your health information **already** collected for this research study.

- Your protected health information may still be used and released should you have a bad reaction (adverse event).
- You may not be allowed to participate in the study.

The use and sharing of your information has no time limit.

If you have not already received a copy of the Privacy Notice, you may request one. If you have any questions about your privacy rights, you should contact the University of Kentucky's Privacy Officer between the business hours of 8am and 5pm EST, Mon-Fri at: (859) 323-1184.

You are the subject or are authorized to act on behalf of the subject. You have read this information, and you will receive a copy of this form after it is signed.

_____ _____
Signature of research subject Date

_____
Printed name of research subject

_____ _____
Name of [authorized] person obtaining informed consent/HIPAA authorization Date

_____
Signature of Principal Investigator or Sub/Co-Investigator