Real-time Biofeedback With 7-Tesla MRI for Neurocircuit Based Treatment of Depression

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STUDY INFORMATION:

Study Title: Real-time biofeedback with 7-Tesla MRI for neurocircuit based treatment of depression

Study site(s): Icahn School of Medicine at Mount Sinai, Mount Sinai Hospital

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SUMMARY OF THIS RESEARCH STUDY:

This document explains a research study you might be interested in joining. Participation in the study is voluntary. You can agree to join or not. Your decision will not limit your ability to receive care at Mount Sinai. You should only agree to take part if you understand the study and if all of your questions about the research study are answered. If you do join the study, the research team must share any new information with you that may change your mind about taking part.

Major Depressive Disorder accounts for more life lived with disability due to a medical illness than any other disease worldwide, but current treatments like psychotherapy and selective-serotonin reuptake inhibitors (SSRIs) are not effective or accessible for all patients.

Previous research has shown that changing activity of a part of the brain called the ventral tegmental area (VTA) can improve depressive symptoms in rodents. Human research has also shown that the activity of the VTA can be changed in healthy volunteers if they are trained to use certain thought patterns while watching their own VTA activity in 'real-time', called 'real-time biofeedback'. The purpose of this research study is to investigate whether this same type of training can influence depression symptoms.

If you choose to participate, you will be asked to complete 3 in-person visits, each lasting roughly 4 hours, and two follow-up telephone calls, roughly 30 minutes. During the appointments you will complete interviews and clinical self-report scales to evaluate your symptoms of depression, motivation, and anhedonia (inability to experience pleasure), as well as computerized cognitive tasks. One of the visits will also involve the real-time biofeedback training described above during a 2-hour MRI scan.

There are no costs associated with participation. You will be compensated for each study visit you complete.

The main risks to you if you choose to participate are (1) eye discomfort, twitching sensations, heat sensations, dizziness, or nausea during the MRI session; (2) claustrophobic reactions in the MRI scanner (i.e. fear of being confined in a small space and unable to escape).

You may also benefit from participation in this research since you will receive a comprehensive psychiatric evaluation and will be provided feedback regarding the findings of this evaluation. Your mood may also improve as a result of the real-time biofeedback training.

Instead of participating in this research, you may consider treatments such as medications or cognitive behavioral therapy that have been shown to be effective as treatment for MDD.

If you are interested in learning more about this study, please continue to read below.

STUDY PARTICIPATION:

You may qualify to take part in this research study because:

1. You are a healthy volunteer and do not have a present or past diagnosis of a psychiatric disorder and are willing and able to participate in this study. Or
2. You have been diagnosed with Major Depressive Disorder.

Your participation in this research study is expected to last up to 12 weeks. It involves 3 in-person visits and 2 follow-up telephone calls.

The number of people expected to take part in this research study at the Icahn School of Medicine is 80.

Funds for conducting this research are provided by the Friedman Brain Institute and Advanced Neuroimaging Research Program at Mount Sinai.

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

DESCRIPTION OF WHAT'S INVOLVED:

If you agree to participate in this research study, the following information describes what may be involved.

After receiving complete disclosure about the research and being given the opportunity to fully review the consent form, you will also be given the opportunity to ask questions. If you choose to take part in the study, you will be asked to sign this written consent form.

Visit 1: Screening (4 hours)

You will complete a diagnostic interview, which means that a study investigator and study clinician will ask you questions about your psychiatric and medical history, your personal, work and education history, and your family history. You will also complete a urine drug test, urine pregnancy test (if relevant), and clinical self-report scales to evaluate symptoms of depression, anxiety and stress.

Typically, these questionnaires will be completed on a secured computer, however you may request a paper copy of these questionnaires if you do not feel comfortable completing them on the computer.
If you are already participating in and/or have already completed screening assessments under "A Screening Protocol for Adult Patients with Mood and Anxiety Disorders, Chronic Medical Conditions, and Healthy Volunteers" (GCO: 06-0945; PI Dr. Murrough), any assessments that have been completed within 6 months of signing the consent for this protocol do not need to be repeated.

Randomization:
If you meet all eligibility criteria, you will be assigned to one of two groups.

I. Active real-time biofeedback
II. Sham real-time biofeedback

No one, not you, or anyone from your medical team or from the research team will be able to choose what group you are assigned to or what study intervention you get. It will be by chance, like flipping a coin. You will have an equal chance of being given either study intervention, active or sham. You will not be told which study intervention you are getting; however, the Lead Researcher, research team, etc. will know.

Visit 2: Assessment (4 hours)

The assessment visit will occur within 4 weeks of Visit 1 and include (1) MRI, (2) computerized cognitive tasks, (3) physiological testing, and (4) clinical self-report scales to evaluate symptoms of depression, motivation, and anhedonia (inability to experience pleasure).

(1) MRI Scanning

On the scan day, you will complete a urine drug test, urine pregnancy test (if relevant), and clinical self-report scales as described above. Once you are in the MRI scanner, you will participate in multiple "training runs" of VTA self-modulation treatment and rest trials. During the training runs, you will be instructed to generate a heightened state of motivation and use motivation strategies to activate the VTA region of the brain. If you are in the active group you will receive accurate feedback about how well you are engaging the VTA. If you are in the sham group, you will receive randomized feedback.

Brain imaging data from Magnetic Resonance (MRI) will be collected from eligible participants and each scanning session will be no longer than 2 hours. MRI scans will be performed on a 7T scanner. MRI scans will be completed at the Translational Molecular Imaging Institute (TMII) in the Hess Center for Science and Medicine. MRI uses a strong magnet to create images without ionizing radiation, x-rays or injection or any contrast agent. You will lie inside the scanner and rest or perform a cognitive task, which will be fully explained to you before scanning. The MRI scanner produces loud noises so you will be provided with earplugs or headphones. You may choose to stop the scan at any time for any reason and will not have to explain why and will not lose any reimbursement.

Because the 7T MRI machine is more powerful than the 1.5T or 3T scanners normally used in most hospitals and clinics, they provide us with an understanding of how the brain functions in health and disease. “Tesla” is the unit that is used to measure the strength of a magnet. The FDA has categorized MRI up to 8.0 Tesla as not a significant health risk device. No serious ill effects have been reported at any facility operating at magnetic field strengths up to 8.0 Tesla and there is no evidence that any harmful or adverse effects can be expected. The 7.0T MR system used to perform scans at the Translational Molecular Imaging Institute, including the radio frequency imaging coils, imaging software, and other associated devices used in your scan, are not yet approved by the FDA.

Magnetic resonance imaging, either at 3T or 7T, is not categorized as a device posing significant health risk. The magnetic fields and radiofrequency magnetic fields, at the strengths used, are believed to be harmless. There are conservative Federal guidelines for radiofrequency magnetic field exposure and our examinations fall within those guidelines. We feel these are safe levels and much less hazardous than a comparable X-ray computed tomography examination.

However, the MR scanner uses a very strong magnet that will attract some metals and affect some electronic devices. If you have a cardiac pacemaker or any other biomedical device in or on your body, it is very important that you tell the operator/investigator immediately. As metallic objects experience a strong attraction to the magnet, it is also very important that, before entering the magnet room, you notify the operator of any metal objects (especially surgical clips), devices, or implants that are in or on your body, including biomedical devices like pacemakers and aneurysm clips, prostheses, and any other metallic objects embedded in the body such as bullets, buckshot, shrapnel, and any metal fragments from working around metal. All such objects must be removed (if possible) before entering the magnet room. In some cases, having those devices will prohibit you from having an MRI scan performed. All other metallic objects – including keys, jewelry, pocket knives, money clips, paper clips, safety pins, hair pins, and barrettes – must also be removed from your person prior to entering the magnet room or approaching the magnet, to prevent them from becoming projectiles or being pulled into the magnet. In addition, objects such as watches, pagers, cell phones, credit cards, and hearing aids could be damaged in the presence of the magnetic field. A locker will be provided for you to secure all your items and valuables. If you have any history of head or eye injury involving metal fragments, if you have ever worked in a metal shop, if you have a kidney problems or if you could be pregnant, you should notify the operator/investigator.

(2) Cognitive Tasks

You will also complete computerized cognitive tasks to assess motivation. Cognitive testing sessions will be no longer than 1 hour. These tasks ask you to participate in a game, which will be explained to you beforehand.

(3) Physiological Testing

During your MRI scan, you will have measurements taken of your body’s physiological state. Examples include:

- Galvanic Skin Response (GSR)
- Heart Rate

- Blood Pressure

(4) Clinical Self Report Scales

See explanation of self-report scales listed under "Screening - Visit 1" Above.

Visit 3: Telephone Call Follow Up #1 (30 minutes; 24 hours after Visit 2)

24 hours after your assessment visit, we will again evaluate your symptoms of depression, motivation, and anhedonia. By default, the "visit" will be completed from home. The study team will contact you via phone at a pre-designated time. You will complete a mood assessment over the phone and then complete self-report scales on your computer or mobile phone via REDcap. REDcap is a secure, password-protected web application for the development and management of surveys and databases. While you will be able to access your own surveys, you will not be able to access anyone else's data. To login, you will enter an access code rather your name or other identifiable information.

If you do not have access to the internet from home or from a public library, you may come in-person to our office to complete the scales.

Visit 4: In-Person Follow Up (2 hours; 7 days after Visit 2)

Visit 4 will be similar to Visit 3 but take place at our research clinic. In addition to completing clinical scales, you will also undergo computerized cognitive tasks and meet with a clinician to discuss any changes in symptoms.

Visit 5: In-Person Follow Up #2 (2 hours, 30 days after visit 2)

Visit 5 will be similar to Visit 4 and, by default, will be completed at our clinic and will not include a meeting with a clinician, by default. However, if you will be unavailable to come in-person, we will schedule a telephone call instead and conduct the visit remotely.

**Note: To accommodate your schedule, the screening phase may occur over up to six weeks, Visit 4 may take place 7 days +/- 3 days after Visit 2, and Visit 5 may take place 30 days +/- 5 days after Visit 2.

Electronic Medical Record:
Because this research study involves the use of an investigational medication, a note must be included in your electronic medical record that you are taking part in the research. This way, anyone involved in your medical care at Mount Sinai will know that you are a study participant, and they can work to avoid any problems or negative outcomes that could arise if they do not know.

Pregnancy:
Since you are participating in a research study that involves experimental treatment with potential risks to a developing fetus, it is recommended, for your protection, that you not become pregnant for the duration of the study. You should not participate if you are breastfeeding.

A urine pregnancy test will be done before you begin the study and will be repeated at before your MRI scan. Therefore, practicing effective birth control is important. No individual birth control is 100% effective.

Recommended methods of birth control are:

- The consistent use of an approved hormonal birth control (pill/patches, rings),
- An intrauterine device (IUD),
- Contraceptive injection (Depo-Provera),
- Double barrier methods (Diaphragm with spermicidal gel or condoms with contraceptive foam),
- Sexual abstinence (no sexual intercourse) or
- Sterilization.

A urine pregnancy test will be done before you begin the study and will be repeated prior to the MRI scan.

All birth control methods (other than abstinence and sterilization) are only effective if you use them properly, start them at least one month before you begin the research study, and continue using them throughout the research study and for one month after the research study ends. If you are unsure whether the method of birth control you use is approved to use while you are in this study, you should ask the Lead Researcher before you begin the study. If you are less than one-year post-menopausal, you could still become pregnant. Should you/your partner become pregnant, whether or not you/your partner have the baby, the people funding and overseeing the research may ask for information on the pregnancy, even if you are no longer part of the study. You/your partner will be asked for additional written consent to share this information if that happens.

FUTURE CONTACT:

The researchers may wish to use your personal contact information to contact you in the future. Do you give the researchers permission to **contact you** in the future to request the collection of additional information about you, discuss how your private information, study data and/or samples might be used, or discuss possible participation in another research study?

Please initial your choice: Yes_____ No_____

If “Yes”, please indicate your preferred method of contact: (initial all that apply)
[ ] Email [ ] Phone [ ] Letter [ ] Text

USE OF YOUR DATA AND/OR SAMPLES:

The researchers would like your permission to keep your personal information (such as, name, address, date of birth, social security number), study data and/or samples (blood, urine, saliva, clinical and brain scan data, or any other body matter) to use or share in future studies. You can still be part of the study if you do not allow us to use or share them. Please select Yes or No to each of the questions below. To decline all future uses/sharing please select 'No' each time

(1) Will you allow the researchers to store your information to use in future research studies?

Yes_____ No_____

If you select No, please stop here and move to the next section, **'Your Responsibilities If You Take Part in This Research'** section below."

If yes, please continue to the next question and tell us how your personal information, study data and/or samples may be used in future research studies.

(2) The researchers can store your data and/or samples in one of two ways:

a) Anonymously (no one will know who the data and/or samples came from). If you choose this option, you can't change your mind. So, if you wanted to have your data and/or samples destroyed in the future, the team could not do it as they would not know which data and/or samples were yours.

b) Linked to your identity (using a code that can show the information came from you personally). In this case you could ask for your data and/or samples to be destroyed in the future if you want that to happen.

How would you like your data and/or samples stored? Please initial **ONE** choice below:

I would like my data and/or samples stored anonymously _____

I would like my data and/or samples stored with a link to my identity through the use of a code_____

(3) Do you give the researchers permission to keep the information indefinitely and use them for future studies that are **directly related** to the purpose of the current study?
Please initial your choice:

Yes_____ No_____

(4) Do you give the researchers permission to keep the information indefinitely and use them for future studies that are **not related** to the purpose of the current study (for example, a different area of research)? Please initial your choice:

Yes_____ No_____

(4.1) From time to time researchers outside of medicine and related sciences would like to use this information. This might be in the field of anthropology, human origins, mapping human migration patterns etc. Do you give permission to use your information outside the fields of medicine and biological sciences? Please initial your choice:

Yes_____ No_____

(a) If the future research in a different area can be done without having to know that the information came from you personally, that will be done.
(b) If the future research in a different area requires that it is known specifically who the information came from, then one of the following will be done:

i. If you allowed the researchers to contact you in the future, they may be able to contact you to explain why your identifiable information is needed and what will be done with it. Your permission will be asked to use your information in that research project.
ii. If you do not give permission to be contacted in the future, or if it is found that contacting you is not practical, for example, because you have moved, your identifiable data may still be used. The Institutional Review Board (IRB) will be asked for permission to use the information linked to your identity. The IRB can give permission for researchers to use and share identifiable health information without contacting you, but only if it determines that sharing the information will not be more than a minimal risk to you or your privacy. The Institutional Review Board (IRB) is a committee of doctors and scientists and nonscientists, including people not associated with this hospital or medical school, whose job it is to protect people who participate in research.

(5) Do you give permission to have portions of the information given **to other researchers,** including those at Mount Sinai, other academic institutions and for profit companies, for use in research within the limits you have chosen above? Please initial your choice:

Yes_____ No_____

(6) Do you give permission to have portions of the data **deposited in large public repositories, (explained below)** for use in research with the limits you may have chosen above? Please read the paragraphs below which explains repositories, then initial your choice:

To do more powerful research, it is helpful for researchers to share information they get from studying human samples. They do this by putting it into one or more scientific databases, where it is stored along with information from other studies. Researchers can then study the combined information to learn even more about health and disease. If you agree to take part in this study, some of your health information might be placed into one or more scientific databases. There are many different kinds of scientific databases; some are maintained by Icahn School of Medicine at Mount Sinai or another institution, some are maintained by the federal government, and some are maintained by private companies. For example, the National Institutes of Health (an agency of the federal government) maintains a database called “dbGaP.” A researcher who wants to study the information must apply for permission to use the database. Different databases may have different ways of reviewing such requests. Researchers with an approved study may be able to see and use your information, along

with that from many other people. Researchers will always have a duty to protect your privacy and to keep your information confidential, but there are risks associated with data collection and sharing. They are described in more detail in the risks section.

Please initial your choice: Yes_____ No_____

YOUR RESPONSIBILITIES IF YOU TAKE PART IN THIS RESEARCH:

If you decide to take part in this research study you will be responsible for the following things:

1. Completing a psychiatric evaluation and providing correct and accurate information.
2. Completing MRI and computer tasks to the best of your ability.
3. Completing the in-person and follow-up study visits.

COSTS OR PAYMENTS THAT MAY RESULT FROM PARTICIPATION:

If you agree to take part in this research study, we will pay you for your time and effort according to the table below.

Visit 1: Screening Visit	*$25*
Visit 2: MRI Scan & Scan Day Cognitive Tasks and Questionnaires	*$100*
Visit 3: Telephone Follow Up	*$15*
Visit 4: In Person Follow Up #1	*$35*
Visit 5: In Person Follow Up #2	*$35*

The maximum amount of compensation you may receive for this study is $210. This will be provided as a check, which will be mailed to you. It can take up to 6 weeks to prepare and give you a check for study participation. If you do not get a check by then, you can first contact the research team. If further assistance is needed, please contact Mount Sinai's Program for the Protection of Human Subjects at (212) 824-8200.

If you incur travel fees as a result of attending in-person study visits, you may receive compensation of up to $50 for each listed visit, with provided proof of payment in the form of a physical or digital receipt. This check will be submitted separately from the total study compensation and will be processed once all supporting documents have been received by the study team.

If you are unable to complete the entire study, you will be paid for the part/visits you have completed.

Your visits and study-related medical tests will not cost you any money. However, if the study doctor arranges for you to have additional medical tests which are not part of the study but needed for your regular healthcare, you may have to pay for these if they are not covered by your government health plan or private insurance.

Tax law may require the Mount Sinai Finance Department to report the amount of reimbursement you receive from Mount Sinai to the Internal Revenue Service (IRS) or other agencies, as applicable. Generally, this reporting would take place if you receive reimbursements that equal $600 or more from Mount Sinai in a calendar year. You would be responsible for the payment of any tax that may be due.

You should also know that it is possible that products may someday be developed with the help of your data, and there are no plans to share any profits from such products with you, regardless of whether your identifiable information is removed.

POSSIBLE BENEFITS:

It is important to know that you may not get any benefit from taking part in this research. Others may not benefit either. However, possible benefits may include the following:

- A comprehensive psychiatric evaluation and will be provided feedback regarding the findings of this evaluation as well as basic education regarding the nature, causes and treatments of psychiatric illness. This process can be a positive and/or educational experience.
- Improvement in mood symptoms.
- The information gathered from this study may contribute to the development and testing of new noninvasive brain imaging techniques (i.e., technology that does not rely on either surgery or on the use of drugs). These techniques may contribute to isolating and describing suspected brain structure or function indicating disease, and/or improving our understanding of normal anatomy and function.
- Helping to provide more information about the causes and treatment of depression that may eventually benefit society at large.
- For illustrative purposes, you may request to receive an image of your brain from the structural MRI scan. This is not to be used for further follow up in regard to individual treatment or additional clinical investigation.

POSSIBLE RISKS AND DISCOMFORTS:

General MRI risks and discomforts:

MRI scanning involves the use of a magnet and radio frequency energy. Therefore, patients who have implanted metal devices, such as pacemakers, certain aneurysm clips, or shrapnel or metal in the eye

are at risk. You will complete a screening form to identify metals, but if you have any question of metal in the body, you should inform the technologist or investigators before entering the magnet room. If you have metal in your body that you are unable to remove, the safety team will determine whether you will be able to undergo MRI scanning safely. Because of the strong magnetic field associated with the scanner, it is rare, but possible, that a metallic object could fly through the air toward the scanner and hit you. To reduce this risk, everyone in the vicinity of the magnet will remove all metal from their clothing or pockets when in the scanning environment.

To create images MRI employs radio waves. These waves are not harmful, however, MRI scanners do produce loud noises when these waves are generated. To minimize discomfort, you will be provided with disposable earplugs or headphones that help suppress external noise levels but do not eliminate the noise so that you can have voice communication with the scanner operator. Some individuals may also experience a feeling of claustrophobia (fear of being trapped in a narrow place) during scanning, but the machine may be stopped at any time during the scan upon your request.

Other risks of MRI that rarely occur include neurostimulation effects, such as muscle twitches and tingling sensations, due to the rapid switching of magnetic fields, and a slight increase in body temperature that may occur in the presence of radio frequency energy. These are very unlikely under current operational guidelines. In the very remote event that the magnet loses its magnetism, helium gas in the magnet will escape. The room is designed with ventilation systems to prevent accumulation of these gases. Should this occur, you will immediately be brought out of the magnet room.

The FDA considers magnetic field strengths up to 8T to pose no more than minimal risk, however the scanner used in this protocol has not specifically been approved for clinical or diagnostic use. No persistent adverse effects have been reported by facilities with magnetic field strengths at 7T. However, some people have reported brief or fleeting dizziness, nausea, or a metallic taste upon being moved into and out of the scanner. These effects typically last less than 10 minutes, and can be minimized by reducing the speed at which the person enters and exits the magnet.

Pregnancy risk:

There are no known risks during pregnancy to having an MRI. There may be risks that are unknown. Current FDA guidelines state that safety has not been established for imaging the fetus.

Incidental Findings:

The machine settings used for this special MRI are not chosen to pick up structural changes in the brain, for example: masses or bleeding. However even research MRI scans may reveal unexpected finding(s). Should this occur, the finding(s) will be considered by the appropriate personnel and the PI will inform you if necessary. These possible finding(s) may or may not be significant and may lead to

anxiety about your condition and to further work-up by your physician and may result in additional cost to you.

OTHER RISKS:

Loss of Private Information:
In any research study there exists the potential for loss of your private information. However, there are strict procedures in place to minimize this risk.

Group Risks:
Although we will not give researchers your name, we will give them basic information such as your race, ethnic group, and sex. This information helps researchers learn whether the factors that lead to health problems are the same in different groups of people. It is possible that such findings could one day help people of the same race, ethnic group, or sex as you. However, they could also be used to support harmful stereotypes or even promote discrimination.

Privacy Risks:
Your name and other information that could directly identify you (such as address, date of birth or social security number) will never be placed into a scientific database. However, there is a small chance that someone could trace your data back to you. The risk of this happening is very small, but may grow in the future. It could be used to make it harder for you (or a relative) to get or keep a job or insurance. If your private information was misused it is possible you would also experience other harms, such as stress, anxiety, stigmatization, or embarrassment from revealing information about your family relationships or health conditions.

OTHER POSSIBLE OPTIONS TO CONSIDER:

You may decide not to take part in this research study. If you decide not to take part, this will not affect the clinical care you receive at Mount Sinai. The choice is totally up to you.

Instead of being in this research study, your choices may include: include treatments such as medications or cognitive behavioral therapy that have been shown to be effective as treatment for MDD. These alternatives are available to you at Mount Sinai and elsewhere and will be described to you fully prior to agreeing to participation in this study.

IN CASE OF INJURY DURING THIS RESEARCH STUDY:

If you are injured or made sick from taking part in this research study, you will get medical care. Generally, it will be billed to you or your insurance. You will be responsible for all treatment costs not covered by your insurance, including deductibles, copayments, and coinsurance. This does not prevent you from seeking payment for injury related to malpractice or negligence. You can contact the Lead Researcher for more information.

ENDING PARTICIPATION IN THE RESEARCH STUDY:

You may stop taking part in this research study at any time without any penalty. This will not affect your ability to receive medical care at any of the Mount Sinai Health System hospitals or to receive any benefits to which you are otherwise entitled.

If you decide to stop being in the research study, please contact the Lead Researcher or the research staff. Data that have not already been used for research will be promptly withdrawn from storage and destroyed by trained laboratory personnel. If you decide you don't want your samples and/or data to be used for research anymore, you can contact the researcher and ask to have your samples and/or data removed from future use. If any data have already been shared without your identity, it won't be possible to retrieve them because no one will know who you are. Data that have already been used will not be affected by your decision. Any data that are still linked to your identity by a code the researcher has will be withdrawn so that no future sharing of your samples and/or data will take place.

If your data have already been deposited in an external repository, the study team will request that your data be removed. You may also withdraw your permission for the use and disclosure of any of your protected information for research, but you must do so in writing to the Lead Researcher at the address on the first page. Even if you withdraw your permission, the Lead Researcher for the research study may still use the information that was already collected if that information is necessary to complete the research study. Your health information may still be used or shared after you withdraw your authorization if you should have an adverse event (a bad effect) from participating in the research study.

Withdrawal without your consent: The study doctor, the sponsor or the institution may stop your involvement in this research study at any time without your consent. This may be because the research study is being stopped, the instructions of the study team have not been followed, the investigator believes it is in your best interest, or for any other reason. If specimens or data have been stored as part of the research study, they too can be destroyed without your consent.

CONTACT INFORMATION:

If you have any questions, concerns, or complaints at any time about this research, or you think the research has harmed you, please contact the office of the research team and/or the Lead Researcher at phone number (212) 585- 4624.

If you experience an emergency during your participation in this research, call 911 or go to the emergency room.

DISCLOSURE OF FINANCIAL INTERESTS:

Researchers sometimes get paid for consulting or doing work for companies that produce drugs, biologics or medical devices. If you have questions regarding industry relationships, you are encouraged to talk to the Lead Researcher or visit our website at http://icahn.mssm.edu/ where Mount Sinai publicly discloses the industry relationships of our faculty.

MAINTAINING CONFIDENTIALITY – HIPAA AUTHORIZATION:

As part of this study, some of your private and/or protected health information will be obtained, used, and shared with your permission. There is a Federal Health Insurance Portability and Accountability Act (HIPAA) that makes sure this is done correctly and safely.

What is protected health information (PHI)?
PHI is the combination of two things:

1. PHI contains information that identifies you. It will be used to contact you and link you to your health information, like name, date of birth, medical record number, and address.
2. PHI also contains health information, including information about your mental and physical health from your visits to doctors or hospitals, or from study visits.

Every time you visit a hospital or your doctor, PHI is created and recorded in your medical record by your healthcare providers. In the same way, the PHI created as part of this study will be linked to who you are and your medical information.

What PHI is collected and used in this research study, and might also be shared with others?

As part of this research project, the research team at the hospital(s) involved in the research will collect your Name, Address, Telephone Number, Date of Birth, and Medical Record Number.

During the study, the researchers will gather information by:

- Reviewing and/or taking your medical history (includes current and past medications or therapies, illnesses, conditions or symptoms, family medical history, allergies, etc.)
- Doing a physical examination that generally also includes blood pressure reading, heart rate, breathing rate, and temperature.
- Completing the tests, procedures, questionnaires and interviews explained in the description section of this consent.

Why is your PHI being used?
Researchers need the information that identifies you so they can contact you during the study. They need your health information and the results of any tests and procedures being collected as part of this study to answer the questions posed in the study. The purpose of the study is discussed earlier in this consent form. Before researchers analyze the data, they remove any information that would let others know who you are or that you took part in the study. If researchers publish or present study results at scientific meetings, lectures, or other events, their presentations would not include any information that would let others know who you are, unless you give separate permission to do so.

The Lead Researcher may also use and share the results of these tests and procedures with other healthcare providers at Mount Sinai who are involved in your care or treatment. The research team and other authorized members of The Mount Sinai Health System ("Mount Sinai") workforce may use and share your information to ensure that the research meets legal, institutional or accreditation requirements. For example:

- The Mount Sinai Program for the Protection of Human Subjects is responsible for overseeing research on human participants and may need to see your information.
- If you receive any payments for taking part in this study, the Mount Sinai Finance Department may need your name, address, social security number, payment amount, and related information for tax reporting purposes.
- If the research team uncovers abuse, neglect, or reportable diseases, this information may be disclosed to appropriate authorities.

Who, outside Mount Sinai, might receive your protected health information?
As part of the study, the Lead Researcher, study team and others in the Mount Sinai workforce may disclose your protected health information, including the results of the research study tests and procedures, to the following people or organizations: (It is possible that there may be changes to the list during this research study; you may request an up-to-date list at any time by contacting the Lead Researcher.)

- The United States Department of Health and Human Services (DHHS) and the Office of Human Research Protection (OHRP) (the government organization that is responsible for protecting human research participants).

In all disclosures outside of Mount Sinai, you will not be identified by name, social security number, address, telephone number, or any other direct personal identifier unless disclosure of the direct identifier is required by law. Some records and information disclosed may be identified with a unique code number. The Lead Researcher will ensure that the key to the code will be kept in a locked file, or will be securely stored electronically. The code will not be used to link your information back to you without your permission, unless the law requires it, or rarely if the Institutional Review Board (IRB) allows it after determining that there would be minimal risk to your privacy. It is possible that a sponsor or their representatives, a data coordinating office, a contract research organization, may come to inspect your records. Even if those records are identifiable when inspected, the information leaving the institution will be stripped of direct identifiers. Additionally, when applicable, the monitors, auditors, the IRB, OHRP, as well as the Food and Drug Administration (FDA) will be granted direct access to your medical records for verification of the research procedures and data. OHRP and FDA are authorized to remove information with identifiers if necessary to complete their task. By signing this document you are authorizing this access. The results of this research may be published. However, your name and other identifying information will be kept confidential.

For how long will Mount Sinai be able to use or disclose your protected health information?
Your authorization for use of your PHI for this specific study does not expire.

Will you be able to access your records?

During your participation in this study, you will have access to your medical record and any study information that is part of that record. The investigator is not required to release to you research information that is not part of your medical record.

Do you need to give us permission to obtain, use or share your health information?
NO! If you decide not to let us obtain, use or share your health information you should not sign this form, and you will not be allowed to volunteer in the research study. If you do not sign, it will not affect your treatment, payment or enrollment in any health plans or affect your eligibility for benefits.

Can you change your mind?
If you decide to stop being in the study, please contact the Lead Researcher or the research staff. The research team may ask you whether they can continue to collect information from your medical record. You will also have to decide if you wish to limit the continued use of the information collected during the study. Under US privacy laws you may also withdraw your permission for the researchers to use and share any of your protected information for research, but you must do so in writing to the Lead Researcher at the address on the first page.

Even if you withdraw your permission, the Lead Researcher may still use the information that was already collected, but only to complete this research study. Your health information may still be used or shared after you withdraw your authorization if you have an adverse event (a bad effect) from taking part in the research study.

If you have not already received it, you will also be given The Hospital's Notice of Privacy Practices that contains more information about how The Hospital uses and discloses your PHI.

It is important for you to understand that once information is disclosed to others outside Mount Sinai, the information may be re-disclosed and will no longer be covered by the federal privacy protection regulations. However, where possible, Mount Sinai has entered into agreements with those who will receive your information to continue to protect your confidentiality.

If researchers are reviewing your medical records or asking questions about your medical history or conditions, it is possible that they may learn information related to your HIV status. If that is the case, the following information concerns you. If researchers are not reviewing your medical records or asking questions about your medical history or conditions, then you may ignore the following section.

Notice Concerning HIV-Related Information

If you are authorizing the release of HIV-related information, you should be aware that the recipient(s) is (are) prohibited from re-disclosing any HIV-related information without your authorization unless permitted to do so under federal or state law. You also have a right to request a list of people who may receive or use your HIV-related information without authorization. If you experience discrimination because of the release or disclosure of HIV-related information, you may contact the New York State Division of Human Rights at (888) 392-3644 or the New York City Commission on Human Rights at (212) 306-5070. These agencies are responsible for protecting your rights.

How the Institutional Review Board (IRB) can help you:

This research has been reviewed and approved by an Institutional Review Board (IRB). You may reach a representative of the Mount Sinai Program for Protection of Human Subjects at telephone number (212) 824-8200 during regular work hours (Monday-Friday, 9am-5pm, excluding holidays) for any of the reasons listed below. This office will direct your call to the right person within the Mount Sinai Health System:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You are not comfortable talking to the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

ADULT PARTICIPANT:
Your signature below documents your permission to take part in this research and to the use and disclosure of your protected health information. A signed and dated copy will be given to you.

_____	_____	_____	_____
Signature of Participant	Printed Name of Participant	Date	Time [required if used for FDA documentation purposes]

PERSON EXPLAINING STUDY AND OBTAINING CONSENT:

_____	_____	_____	_____
Signature of consent delegate	Printed Name of consent delegate	Date	Time

WITNESS SECTION:

My signature below documents that the information in the consent document and any other written information was accurately explained to, and apparently understood by, the participant, and that consent was freely given by the participant.

_____	_____	_____	_____
Signature of Witness	Printed Name of Witness	Date	Time