Combined $^{18}$F NaF/$^{18}$F FDG PET/MRI for Detection of Skeletal Metastases

The following information applies to the individual.

Are you participating in any other research studies? _____ Yes _____ No

INTRODUCTION TO RESEARCH STUDIES

A research study is designed to answer specific questions, sometimes about a drug or device’s safety and its effectiveness. Being in a research study is different from being a patient. When you are a patient, you and your personal doctor have a great deal of freedom in making decisions about your health care. When you are a research subject, the Protocol Director and the research staff will follow the rules of the research study (protocol) as closely as possible, without compromising your health.

PURPOSE OF RESEARCH

You are invited to participate in a research study of the value of PET/MRI in detection of skeletal and soft tissue metastases. We hope to learn what is the best approach for detection of metastases and thus to improve cancer treatment. You were selected as a possible subject in this study because you are evaluated for presence of metastases.

Your participation in this study is entirely voluntary.

Your decision whether to participate or not will not prejudice you or your medical care. If you decide to participate, you are free to withdraw your consent, and to discontinue participation at any time without prejudice to you or effect on your medical care. If you decide to terminate your participation in this study, you should notify the Protocol Director, Dr. Andrei Iagaru, at 650-725-4711.

This research study is looking for people with cancer who are screened for skeletal and soft tissue metastases at Stanford. Stanford University expects to enroll 170 research study subjects.

DURATION OF STUDY INVOLVEMENT

The accrual period will be approximately 2 years for the next 50 participants. Your participation in this study is expected to last approximately 2 hours for the PET/MRI visit. Clinical follow-up will be 12 months after the scan. Data analysis will require up to 6 months.
PROCEDURES

If you choose to participate, Dr. Iagaru and his research study staff will set up your PET/MRI examination. You will lie on a comfortable padded table. A glucose (sugar) solution containing a small amount of radioactivity (named FDG) and F-18 sodium fluoride (NaF, a chemical that binds to bony structures) will be injected into a vein in your arm. FDG, fluorodeoxyglucose, is a glucose analog which is taken up by high-glucose-using cells such as brain, kidney, and cancer cells. The combined FDG and NaF PET/MRI scan may provide improved information about the metabolism of musculoskeletal lesions. The table will move slowly through the tube-shaped PET/MRI scanner as it acquires the information needed to generate diagnostic images. Images of its distribution in your body will be acquired for approximately 45 minutes.

You will be asked to lie very still during the scan because movement can interfere with the results. You will be asked to breath normally during the scan. During the scan, you might hear a humming noise but you will not feel anything unusual. You may feel the table move while images are being taken at certain locations on your body. Our technologist will monitor you during the exam.

The whole-body MRI scanning procedure is very much like an x-ray CT scan. You may be given an IV (intravenous) contrast injection to enhance the results of your study. You will be asked to lie on a long narrow couch for about 45 minutes while the machine gathers data.

During this time you will not be exposed to x-rays, but rather a strong magnetic field and radiofrequency magnetic fields. You will not feel either. You will, however, hear repetitive tapping noises that arise from the MR scanner. We will provide earplugs or headphones that you will be required to wear. The space within the large magnet in which you lie is somewhat confined, although we have taken many steps to relieve the "claustrophobic" feeling.

PET/MRI FOR FUTURE RESEARCH

PET/MRI is used to describe information regarding the function, as well as location and size of the tumor. MRI has excellent properties to describe the shape, location and size of bone lesions and can complement PET as a test. You have been given this consent form because the investigators want to include your studies in a future research project.

Your studies will be stored at Stanford for security and confidentiality. Your name or other public identifiers will not be included with any data shared with other investigators.

You have the right to refuse to allow us the use of your data for future research. You may withdraw from this study at any time. If you decide later to withdraw from the study, your PHI obtained up until that withdrawal may be used in the study.

Any images which are used in research may result in new products, tests, or discoveries. In some instances, these may have potential commercial value and may be developed and owned by
the Investigators, Stanford University and/or others. However, participants in the study do not retain any property rights to the materials. Therefore, you would not share in any financial benefits from these products, tests, or discoveries.

Do you agree to allow us to store your data for future research?  

☐ Yes  ☐ No

Please initial __________

 MRI (MAGNETIC RESONANCE IMAGING)

This PET/MRI machine uses a strong magnet and radiofrequency magnetic fields to make images of the body interior.

RISKS of MRI:

Magnetic fields do not cause harmful effects at the levels used in the MRI machine. 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 may experience a strong attraction to the magnet, it is also very important that you notify the operator of any metal objects (especially surgical clips), devices, or implants that are in or on your body before entering the magnet room. All such objects must be removed (if possible) before entering the magnet room. In some cases, having those devices means you should not have an MRI scan performed. In addition, watches and credit cards should also be removed as these could be damaged. You will be provided a way to secure these items.

If you have any history of head or eye injury involving metal fragments, if you have ever worked in a metal shop, or if you could be pregnant, you should notify the operator/investigator.

There is a possibility that you will experience a localized twitching sensation due to the magnetic field changes during the scan. This is expected and should not be painful.

If you have had a previous reaction to Gadolinium-based contrast agents, a history of severe allergies, or a history of kidney disease, please notify the operator/investigator.

Some of the hardware, imaging software and devices being used in your scan are not approved by the FDA, but are similar to counterparts that have been approved by the FDA. There is a small risk of heating from the cables associated with these devices. Please report any heating sensation immediately.

IF YOU FEEL DISCOMFORT AT ANY TIME, NOTIFY THE OPERATOR AND YOU CAN DISCONTINUE THE EXAM AT ANYTIME.
The scans performed in this study are for specific research purposes and are not optimized to find medical abnormalities. The investigators for this project may not be trained to perform medical diagnosis. The investigators and Stanford are not responsible for failure to find existing abnormalities with these MRI scans. However, on occasion the investigator may notice a finding on an MRI scan that seems abnormal. When this occurs, a physician will be consulted as to whether the findings merits further investigation, in which case the investigator will contact you and your primary care physician and inform you of the finding. The decision as to whether to proceed with further examination or treatment lies solely with you and your physician. The investigators, the consulting physician, and Stanford are not responsible for any examination or treatment that you undertake based on these findings. Because the images collected in this study may not comprise a proper clinical MRI scan, these images will not be made available for diagnostic purposes.

Dizziness and nausea may occur if the head is moved rapidly within the bore of the magnet.

### POSSIBLE RISKS, DISCOMFORTS, AND INCONVENIENCES

There are risks, discomforts, and inconveniences associated with any research study. These deserve careful thought.

The administration of the radioactive substance for the PET/MRI will feel like a slight pinprick if given by intravenous injection. Patients who are claustrophobic may feel some anxiety while positioned in the scanner. Also, some patients find it uncomfortable to hold one position for more than a few minutes. You will not feel anything related to the radioactivity of the substance in your body. Because the radioactivity is very short-lived, the radiation exposure is low. The substance amount is so small that it does not affect the normal processes of the body.

This research study involves exposure to radiation from one 18F Sodium Fluoride combined with 18F FDG PET study. This radiation exposure is not necessary for your medical care and is for research purposes only. The additional amount of radiation exposure is about 540 mrem, which is approximately equal to 11% of the limit that radiation workers are allowed to receive in one year. This amount of radiation involves minimal risk and is necessary to obtain the research information desired.

Side effects of the MRI contrast agent injection include mild headache, nausea and local pain. Rarely (less than 1% of the time) low blood pressure and lightheadedness occurs. This can be treated immediately with intravenous fluids. Very rarely (less than one in one thousand), patients are allergic to the contrast agent. These effects are most commonly hives and itchy eyes, but more severe reactions have been seen which result in shortness of breath. If you have had a previous reaction to Gadolinium-based contrast agents or a history of severe allergies, please notify the operator/investigator.

PET/MRI may involve risks to the subject (or the embryo, fetus, or nursing infant if the subject is or may become pregnant) which are currently unforeseeable.
If you are a woman who is able to become pregnant, it is expected that you will use an effective method of birth control to prevent exposing a fetus to a potentially dangerous agent with unknown risk. If you are pregnant or currently breast feeding, you may not participate in this study. You understand that if you are pregnant, if you become pregnant, or if you are breast-feeding during this study, you or your child may be exposed to an unknown risk.

To confirm to the extent medically possible that you are not pregnant, you agree to have a pregnancy test done before beginning this research study. You must agree to avoid sexual intercourse or use a birth control method judged to be effective by the investigator and which will not interfere with the proposed investigation. You must accept the risk that pregnancy could still result despite the responsible use of reliable method of birth control. You agree to notify the investigator as soon as possible of any failure of proper use of your birth control method, or if you become pregnant, either of which may result in your being withdrawn from the study.

You should talk with the Protocol Director if you have any questions.

**POTENTIAL BENEFITS**

You will not receive any direct benefits from this study. **WE CANNOT AND DO NOT GUARANTEE OR PROMISE THAT YOU WILL RECEIVE ANY BENEFITS FROM THIS STUDY.**

**ALTERNATIVES**

The alternative is not to participate in this study.

**SUBJECT’S RESPONSIBILITIES**

You should:
- Ask questions as you think of them.
- Tell the Protocol Director or research staff if you change your mind about staying in the study.

While participating in this study, you should not take part in any other research project without approval from all of the investigators. This is to protect you from possible injury arising from such things as extra blood drawing, extra x-rays, interaction of research drugs, or similar hazards.

**WITHDRAWAL FROM STUDY**

If you first agree to participate and then you change your mind, you are **free to withdraw** your consent and discontinue your participation at any time. Your decision will not affect your ability to receive medical care for your disease and you will not lose any benefits to which you would otherwise be entitled.
If you withdraw from the study, your images will not be analyzed.

The Protocol Director may also withdraw you from the study for one or more of the following reasons:
- Failure to follow the instructions of the Protocol Director and/or study staff.
- The Protocol Director decides that continuing your participation could be harmful to you.
- The study is cancelled.
- Other administrative reasons.
- Unanticipated circumstances.

**SUBJECT’S RIGHTS**

You should not feel obligated to agree to participate. Your questions should be answered clearly and to your satisfaction.

If you decide not to participate, tell the Protocol Director. You will still receive care for your disease and will not lose any benefits to which you would otherwise be entitled.

You will be told of any important new information that is learned during the course of this research study, which might affect your condition or your willingness to continue participation in this study.

**CONFIDENTIALITY**

Your identity will be kept as confidential as possible, as required by law. Except as required by law, you will not be identified by name, social security number, address, telephone number, or any other direct personal identifier.

The results of this research study may be presented at scientific or medical meetings or published in scientific journals. However, your identity will not be disclosed.

Patient information may be provided to Federal and other regulatory agencies as required. The Food and Drug Administration (FDA), for example, may inspect research records and learn your identity if this study falls within its jurisdiction.
Authorization To Use Your Health Information For Research Purposes

Because information about you and your health is personal and private, it generally cannot be used in this research study without your written authorization. If you sign this form, it will provide that authorization. The form is intended to inform you about how your health information will be used or disclosed in the study. Your information will only be used in accordance with this authorization form and the informed consent form and as required or allowed by law. Please read it carefully before signing it.

What is the purpose of this research study and how will my health information be utilized in the study?
This study will attempt to correlate the results of bone scans with PET/MRI, in order to determine the best approach for skeletal and soft tissue metastases identification. This should improve the diagnosis and/or management of cancer. Your health information related to this study, including but not limited to your medical history, lab results, and imaging results, may be used to correlate with the PET/MRI results.

Do I have to sign this authorization form?
You do not have to sign this authorization form. But if you do not, you will not be able to participate in this research study. Signing the form is not a condition for receiving any medical care outside the study.

If I sign, can I revoke it or withdraw from the research later?
If you decide to participate, you are free to withdraw your authorization regarding the use and disclosure of your health information (and to discontinue any other participation in the study) at any time. After any revocation, your health information will no longer be used or disclosed in the study, except to the extent that the law allows us to continue using your information (e.g., necessary to maintain integrity of research). If you wish to revoke your authorization for the research use or disclosure of your health information in this study, you must write to Dr. Andrei Iagaru at 300 Pasteur Dr, H2200, Stanford, CA 94305.

What Personal Information Will Be Used or Disclosed?
Your health information related to this study may be used or disclosed in connection with this research study, including, but not limited to, your name,
contact information and medical record number, date of birth, medical history, physical examination, lab tests, pathology, and imaging tests such as x-rays, CT scans, bone scans, and ultrasounds studies.

Who May Use or Disclose the Information?
The following parties are authorized to use and/or disclose your health information in connection with this research study:

- Dr. Andrei Iagaru (the Protocol Director) and members of the research team including technicians and research coordinators.
- The Stanford University Administrative Panel on Human Subjects in Medical Research and any other unit of Stanford University as necessary.

Who May Receive / Use the Information?
The parties listed in the preceding paragraph may disclose your health information to the following persons and organizations for their use in connection with this research study:

- The Office for Human Research Protections in the U.S. Department of Health and Human Services
- This research is being conducted in part with support from GE Healthcare. Personal information (such as name or date of birth) will not be used in the information or the images being shared with GE Healthcare. Anonymized images will be provided to GE Healthcare for product development and quality assurance purposes. The provided information will also be used to improve instruments.
- The Food and Drug Administration

Your information may be re-disclosed by the recipients described above, if they are not required by law to protect the privacy of the information.

When will my authorization expire?
Your authorization for the use and/or disclosure of your health information will expire December 31, 2020.

Signature of Adult Participant ___________________________ Date ___________________________
Print Name of Adult Participant

Signature of Legally Authorized Representative (LAR) Date
(e.g., parent, guardian or conservator)

Print Name of LAR

LAR’s Authority to Act for Participant
(e.g., parent, guardian or conservator)
FINANCIAL CONSIDERATIONS

PAYMENT: Participants in study will be paid $150. Payments may only be made to U.S. citizens, legal resident aliens, and those who have a work eligible visa.

COSTS: The sponsor (GE Healthcare) will pay for the cost of the PET/MRI. You will not be responsible for any costs associated with this study.

SPONSOR: GE Healthcare is providing financial support and/or material for this study.

Dr. Andrei Iagaru is a paid consultant to GE Healthcare, the company whose products are being used in this study.

CONTACT INFORMATION

☐ If you need to change your appointment, please contact [redacted]

☐ Questions, Concerns, or Complaints: If you have any questions, concerns or complaints about this research study, its procedures, risks and benefits, or alternative courses of treatment, you should ask the Protocol Director, [redacted]

☐ Injury Notification: If you feel you have been hurt by being a part of this study, please contact the Protocol Director, [redacted]

☐ Independent Contact: If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact the Stanford Institutional Review Board (IRB) to speak to someone independent of the research team at [redacted] or toll free at [redacted]

You can also write to the Stanford IRB, Stanford University, 3000 El Camino Real, Five Palo Alto Square, 4th Floor, Palo Alto, CA 94306.

COMPENSATION

All forms of medical diagnosis and treatment -- whether routine or experimental -- involve some risk of injury. In spite of all precautions, you might develop medical complications from participating in this study. If such complications arise, the Protocol Director and the research study staff will assist you in obtaining appropriate medical treatment but this study does not provide financial assistance for additional medical or other costs. Additionally, Stanford is not responsible for research and medical care by other institutions or personnel participating in this study. You do not waive any liability rights for personal injury by signing this form.

EXPERIMENTAL SUBJECT'S BILL OF RIGHTS

As a human subject you have the following rights. These rights include but are not limited to the subject's right to:
be informed of the nature and purpose of the experiment;
be given an explanation of the procedures to be followed in the medical experiment, and any drug or device to be utilized;
be given a description of any attendant discomforts and risks reasonably to be expected;
be given an explanation of any benefits to the subject reasonably to be expected, if applicable;
be given a disclosure of any appropriate alternatives, drugs or devices that might be advantageous to the subject, their relative risks and benefits;
be informed of the avenues of medical treatment, if any available to the subject after the experiment if complications should rise;
be given an opportunity to ask questions concerning the experiment or the procedures involved;
be instructed that consent to participate in the medical experiment may be withdrawn at any time and the subject may discontinue participation without prejudice;
be given a copy of the signed and dated consent form;
and be given the opportunity to decide to consent or not to consent to a medical experiment without the intervention of any element of force, fraud, deceit, duress, coercion or undue influence on the subject's decision.

Signing your name means you agree to be in this study and that you were given a copy of this signed and dated consent form.

________________________________________  __________________
Signature of Adult Participant                  Date

__________________  __________________
Print Name of Adult Participant

________________________________________  __________________
Signature of Legally Authorized Representative (LAR)                  Date
(e.g., parent, guardian or conservator)

__________________
Print Name of LAR

________________________________________
LAR’s Authority to Act for Participant
(e.g., parent, guardian or conservator)

(If available) Signature of Other Parent or Guardian                  Date
Print Name of Other Parent or Guardian

Authority to Act for Participant

Signature of Person Obtaining Consent

Date

Print Name of Person Obtaining Consent

The following witness line is to be signed only if the consent is provided as a summary form and accompanied by a short form foreign language consent.

Signature of Witness

Date

Print Name of Witness

(e.g., staff, translator/interpreter, family member, or other person who speaks both English and the participant's language)

- Translated short form must be signed and dated by both the participant (or their LAR) AND the witness.
- The English consent form (referred to as the "Summary Form" in the regulations):
  - Must be signed by the witness AND the Person Obtaining Consent (POC).
  - The non-English speaking participant/LAR does not sign the English consent.
  - The non-English speaking participant/LAR should not sign the HIPAA participant line
  - If the participant or the LAR is non-English speaking, the Person Obtaining Consent (POC) must ensure that 1) the LAR's Description of Authority is completed and 2) that any questions or options presented by the consent form are documented and initialed by the POC on the Summary Form, per the participant's wishes, as they are understood during the consent process.