Permission to Take Part in a Human Research Study

Do not sign this consent if today’s date is later than the stated expiration date above.

Title of Research Study: MRI Study of High Definition Transcranial Electrical Stimulation in Chronic Tinnitus (MRI HDtES-T)

Investigator: Amber M. Leaver, Ph.D.

Supported By: This research is supported by the National Institutes of Health

Key Information:
The first few pages of this document include a summary of this study to help you decide whether or not to participate. Detailed information is provided after the summary.

Why am I being asked to take part in this research study?
We are asking you to take part in this research study because you have chronic tinnitus.

What should I know about a research study?
• Someone will explain this research study to you.
• Whether or not you take part is up to you.
• You can choose not to take part.
• You can agree to take part and later change your mind.
• Your decision will not be held against you.
• You can ask all the questions you want before you decide.

Why is this research being done?
The purpose of this research study is to understand how a kind of brain stimulation, called transcranial electrical stimulation (tES), affects brain function in people with chronic tinnitus.

tES delivers low electrical current to the head using electrodes applied to the skin, and is described as a “neuromodulation” or “neurostimulation” technique. This study uses a specific kind of tES called “transcranial direct current stimulation”, or tDCS, where a constant (unchanging) electrical current is passed between electrodes on the head. For simplicity, we will use the more general term “tES” in this form, though both are correct.

Neurostimulation methods like tES have shown promise in changing brain function, as well as treating some brain conditions like chronic tinnitus. However, how it works is unclear. To better understand how tES works, we will use MRI (a type of brain scan) to measure brain function after tES in people with chronic tinnitus.

There are no potential benefits to you or others should you choose to participate in this research study.

The use of tES and MRI in this research study is for investigational purposes only. This investigational device is not approved by the USFDA for the condition for which you are being treated.
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How long will the research last and what will I need to do?
We expect that you will be in this research study for about 7 weeks. During this time, you will attend 5 study visits at Northwestern’s Chicago campus. The timing of these study visits is described further below.

During study visits, you will be asked to fill out questionnaires about your medical history and complete simple tests of perception and cognition. During the first study visit, you will have two MRI scans. During five study visits, you will have tES applied to your head.

More detailed information about the study procedures can be found under the section What happens if I say “Yes, I want to be in this research”?

Is there any way being in this study could be bad for me?
MRI and tES may be uncomfortable. During MRIs, you will lay on your back in an enclosed space (the MRI scanner) for one hour. During tES, you may feel tingling or slight discomfort under the electrodes. Filling out questionnaires regarding your medical history may cause emotional distress or embarrassment.

More detailed information about the risks of this study can be found under “Is there any way being in this study could be bad for me? (Detailed Risks)”

Will being in this study help me any way?
We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include short-term improvement of tinnitus symptoms. Possible benefits to others include contributing to knowledge that may one day improve tES as a therapy for brain conditions like chronic tinnitus.

What happens if I do not want to be in this research?
Participation in research is completely voluntary. You decide whether or not to participate. If you choose to not participate, there will be no penalty to you or loss of benefit to which you are entitled.

Instead of being in this research study, your choices may include:
- Not participating in this study.
- Receiving standard treatment for your condition without being in a study. You can discuss your options with your doctor or clinician.
- Taking part in a different study.

Who can I talk to?
If you have questions, concerns, or complaints, or think the research has hurt you, talk to the research team at (312) 694-2966 or inmri@northwestern.edu.
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This research has been reviewed and approved by an Institutional Review Board (IRB). You may talk to them at (312) 503-9338 or irb@northwestern.edu if:

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

How many people will be studied?
We expect about 20 people here will be in this research study out of 20 people in the entire study nationally.

What happens if I say “Yes, I want to be in this research”?
You will participate in five study visits at the Center for Translational Imaging (CTI) at Northwestern University, located at the Olson Pavilion, 710 N Fairbanks Ct in Chicago. During your study visits, you will interact with trained study staff, as well as trained MRI and administrative staff at the CTI. The schedule of study visits and procedures is described below.

Study Visits at NU (white) and Follow-Up At Home (shaded)

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Duration of Visit: 30m 5-10m 4-5h 1h 1h 1h 1h 5-10m 5-10m 5-10m

Intake will occur by phone and/or secure website approximately 2 weeks before Visit 1. During Intake, you will review and sign this consent form, review study procedures with study staff, and ask any questions you have. You will also complete questionnaires about your medical history by phone or secure website weekly for two weeks before Visit 1.

Visit 1 will take 4-5 hours. Some Visit 1 activities may be done via phone or secure video conference prior to arriving at Northwestern, as noted below. During this visit, you will:
- Review all study procedures with study staff, and ask any questions.
- Complete questionnaires about your medical history at home via secure website or phone, or during your first study visit to Northwestern. Topics include:
  - MRI safety
  - tES safety
  - Experiences and conditions that can affect brain function, including neurodevelopmental disorders, neurological injury and disorders, psychiatric and/or mood disorders, and overall health
- Complete brief tests of perception and thinking at a computer
- Have hearing test at Northwestern’s Audiology Services. This visit will last approximately 1 hour and will take place at the Galter Pavilion Suite 15-200, located at 675 North Saint Clair Street in Chicago. Audiology Services is located near CTI, and this hearing test can
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be scheduled before or after any study visit at CTI, or at another time convenient to your schedule.

- Have active or sham (inactive placebo) tES for 20 minutes. During tES you will wear a fitted cap, with electrode attached and covered with water-soluble gel. During active tES, electrical current is turned on for 20 minutes. During sham tES, electrical current is turned on for only 1-2 minutes. Sham tES will feel the same as active tES on your skin, but is unlikely to change symptoms or brain activity. Whether you have active and sham tES will be chosen by chance, like the flip of a coin. Neither you or study staff will choose whether you have active or sham tES. You will not know whether you have active or sham tES; however, study staff will know.

- Have 2 MRI scans, one before tES and one after tES. Each MRI will last about 30 minutes.

Visits 2-5 will be scheduled on four consecutive days after Visit 1 (for example, Monday through Friday, if Visit 1 was on a Monday). Visits 2-5 will last about 1 hour each. During these visits, you will:

- Have active or sham (inactive placebo) tES for 20 minutes. If you had active tES at Visit 1, you will have active tES during Visits 2-5. If you had sham tES at Visit 1, you will have sham tES during Visits 2-5. You will not know whether you have active or sham tES; however, study staff will know.

- Complete questionnaires about your tinnitus and about tES.

- Complete brief tests of perception and thinking at a computer on Visit 5.

One week, two weeks, and one month after Visit 5, we will ask you to fill out questionnaires about your tinnitus and about tES. These can be done online via secure website or over the phone. One month after Visit 5, we will also tell you whether you had active or sham (inactive placebo) tES during Visits 2-5. This is called debriefing. If you had sham tES during Visits 2-5, you may choose to schedule five study visits to receive active tES. These visits will be scheduled on five consecutive days (for example, Monday through Friday), and we will ask you to complete the same questionnaires you did during Visits 1-5. We cannot offer additional compensation for these visits, but we will pay for your parking.

Two devices are used during this study. Both are for experimental (investigational) use only in this study, and include:

- MRI scanner (manufactured by Siemens)
- tES device (manufactured by Soterix Medical)

Please note that you will be asked to indicate at the end of this consent form whether you are interested in being contacted for future studies like this one. Your answer will not affect your ability to participate in this current study.

What are my responsibilities if I take part in this research?
If you take part in this research, you will be responsible to: arrive to study visits on time and follow study instructions.

What happens if I say “Yes”, but I change my mind later?
You can leave the research at any time; it will not be held against you.

If you decide to leave the research, contact the investigator at (312) 694-2966 or inmri@northwestern.edu so that the investigator can cancel any remaining study visits.
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Choosing not to be in this study or to stop being in this study will not result in any penalty to you or loss of benefit to which you are entitled. Specifically, your choice not to be in this study will not negatively affect your right to any present or future medical treatment, your class standing (for students enrolled in a class at NU), or your present or future employment (for employees at NU or its affiliates).

Detailed Risks: Is there any way being in this study could be bad for me?
This research may hurt you in the following ways:

Physical risks

- **tES might be uncomfortable.** Potential risks and discomforts associated with tES include tingling, mild irritation, or a light itching sensation under the electrodes. This is a natural, non-painful sensation associated with the passing of electrical current through the skin. You may also experience redness under tES electrodes. For many people, these sensations lessen or disappear soon after the start of stimulation, and are rarely reported as unpleasant or painful. However, if you become uncomfortable, please inform the staff and tES can be terminated immediately.

  Alert study staff immediately if:
  - you feel uncomfortable tingling after the first 30-60 seconds of tES and wish to stop
  - you feel heating, burning, or pain under tES electrodes during tES-MRI at any time
  - you have skin condition, injury, or sensitivity on your scalp

  tES uses a low level of electrical current, and has been used with no significant adverse effects in clinical research laboratories worldwide for the last 30-40 years in healthy adults and for the treatment of tinnitus, depression, anxiety, chronic pain, and stroke. Established safety procedures for tES will be strictly followed in this study.

- **MRI scans might be unsafe if you have metal or implants in your body.** The MRI scanner uses magnetic fields to take pictures, and this can attract and influence certain metals. Therefore, people with metal in their body that cannot be removed (like pacemakers, infusion pumps, aneurysm clips, metal prostheses, metal joints, rods, plates, or other metallic objects) will be excluded from this study. You must tell the investigators supervising this protocol if you have any kind of implant in your body. The metal used in dental fillings is less susceptible and is therefore allowed. You will be asked to change into a hospital gown and/or hospital “scrub” pants prior to your MRI scan.

- **MRI and pregnancy.** MRI is not known to pose risks to a pregnancy or fetus. However, having an MRI while pregnant may hurt a pregnancy or fetus in ways that are unknown. It is possible that there are risks about which the investigators are unaware or cannot foresee. Because of this, pregnant women and women who are trying to become pregnant are excluded from this study. If you are unsure whether you are pregnant, you will also be excluded from this study.

- **MRI is loud.** The sound of the MRI scanner can also be quite loud, and prolonged exposure has the potential to damage your hearing. So, you will be given special ear plugs and/or headphones to minimize this noise.

- **MRI scans might be uncomfortable.** Although some people find MRI to be a comfortable experience, others might become uncomfortable. You will be asked to lay on your back for the duration of the scan, and special padding or foam might be used to help keep your head still. Some people may feel claustrophobia or anxiety from being a tight, enclosed space. If you become uncomfortable for any reason, please inform the staff and the MRI can be terminated immediately.

- **Research MRI is not diagnostic.** The brain images obtained from this research cannot be used to screen for or diagnose medically significant brain abnormalities. Because these brain scans
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are not designed to detect all possible brain abnormalities, you should not assume, based on this research, that the scan of your brain was normal if this ever becomes an issue in your future medical care. However, if the investigators do identify an unsuspected anomaly that may be of potential medical significance, they will discuss this with you and suggest options for medical follow-up such as you talking with or seeing your regular medical doctor.

Psychological risks

- Completing questionnaires or perceptual/cognitive tests might be boring or uncomfortable. During these tests, you will be sitting at a desk or table writing on paper or typing at a computer. Some people might find this part of the study boring or tedious, and others might be uncomfortable answering questions about their thoughts, feelings, or medical history. Otherwise, we do not expect these questionnaires or tests to pose any significant risks or discomforts.

- Hearing tests may also be boring or uncomfortable. There are no physical risks to having a hearing test, but it may be boring or tedious, and you may feel uncomfortable answering questions about your hearing history.

Privacy/Confidentiality risks

- Your privacy and confidentiality. This study involves the use of your identifiable, personal information and there is a chance that a loss of confidentiality could occur. The researchers have procedures in place to lessen the possibility of this happening. See the section below titled: “What happens to the information collected for the research?”

This research uses an investigational device, tES. Therefore, In addition to these risks, this research may hurt you in ways that are unknown. These may be a minor inconvenience or may be so severe as to cause death.

What do I need to know about reproductive health and/or sexual activity if I am in this study?

The research may also hurt a pregnancy or fetus in ways that are unknown. These may be a minor inconvenience or may be so severe as to cause death.

You should not be or become pregnant while on this research study.

Will it cost me anything to participate in this research study?

Taking part in this research study will not lead to any costs to you.

Will being in this study help me in any way?

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include short-term improvement of tinnitus symptoms. Possible benefits to others include contributing to knowledge that may one day improve tES as a therapy for brain conditions like chronic tinnitus.

What happens to the information collected for the research?

Efforts will be made to limit the use and disclosure of your personal information, including research study and medical records, to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of this institution, the sponsor.

Study data will be retained after the study for future research. These data will be de-identified, meaning that they will not be linked to any information that could identify you, like your name or
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phone number. These data will be stored in secure, password-protected computers located in the PI’s laboratory in a secure suite only accessible by approved study staff. The data will be retained indefinitely for use in future research.

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

Data Sharing
De-identified data from this study may be shared with the research community at large to advance science and health. We will remove or code any personal information that could identify you before files are shared with other researchers to ensure that, by current scientific standards and known methods, no one will be able to identify you from the information we share. Despite these measures, we cannot guarantee anonymity of your personal data.

Can I be removed from the research without my OK?
The person in charge of the research study or the sponsor can remove you from the research study without your approval. Possible reasons for removal include arriving late for study visits or not following study instructions.

What else do I need to know?
If you become ill or get injured as a result of this study (devices or procedures), you should seek medical treatment through your doctor or treatment center of choice. You should promptly tell the study doctor about any illness or injury.

The researchers will not pay for medical care required because of a bad outcome resulting from your participation in this research study. This does not keep you from seeking to be paid back for care required because of a bad outcome.

If you agree to take part in this research study, we will pay you $150 for your time and effort at the end of the study. Should you choose to withdraw from the study, or if study staff should withdraw you from the study, before the study is complete, you will be paid $15 per hour you completed. You will also receive compensation for parking for each study visit.

The Accounting Services at Northwestern University may be given your name, address, and Social Security Number in order to issue a check for your study participation. Study payments are considered taxable income and reportable to the IRS. A Form 1099 will be sent to you if your total payments are $600 or more in a calendar year.

HIPAA Authorization
We are committed to respect your privacy and to keep your personal information confidential. When choosing to take part in this study, you are giving us the permission to use your personal health information that includes health information in your medical records and information that can identify you. For example, personal health information may include your name, address, phone number or social security number. Your health information we may collect and use for this research includes:

- Medical history and surgical records relevant to MRI safety
- Name, address, phone number, and date of birth to be used to schedule hearing tests at Northwestern’s Audiology Clinic for this research study
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- Hearing tests

During this study, you may be coming to a Northwestern Memorial Healthcare corporation entity (for example, Northwestern Memorial Hospital, Prentice Women’s Hospital) for research appointments or to get clinical services, such as lab tests, needed for the study. When that happens, you will be scheduled for these services through the NMHC computer system. When a clinical exam or lab is done by NMHC or one of its employees for the purpose of this research study, that information will be kept in both NMHC’s clinical records and in the study records.

The following clinical providers may give the researchers information about you: all current and previous health care providers, including but not limited to the Shirley Ryan AbilityLab (SRALAB), Northwestern Medical Group (NMG), Northwestern Memorial Hospital (NMH), and Northwestern Lake Forest Hospital (NLFH).

Once we have the health information listed above, we may share some of this information with the following offices or entities outside of Northwestern University and its clinical partners (or affiliates): the Northwestern University Institutional Review Board Office and Office for Research Integrity; the US Office of Research Integrity; the US Office for Human Research Protections; the US Food and Drug Administration.

Any research information shared with outside entities will not contain your name, address, telephone or social security number or any other personal identifier unless disclosure of the identifier is necessary for review by such parties or is required by law or University policy [except that such information may be viewed by the Study sponsor and its partners or contractors at the Principal Investigator’s office].

The following entities may receive your health information:
- Authorized members of the Northwestern University workforce, who may need to see your information, such as administrative staff members from the Office for Research, Office for Research Integrity and members of the Institutional Review Board.
- Clinical affiliates, including but not limited to the Shirley Ryan AbilityLab (SRALAB), Northwestern Medical Group (NMG), Northwestern Memorial Hospital (NMH), Northwestern Lake Forest Hospital (NLFH), and the Ann & Robert H. Lurie Children’s Hospital of Chicago (Lurie Children’s). Your participation in this clinical trial may be tracked in an electronic database and may be seen by investigators running other trials that you are enrolled in and by your healthcare providers.

Those persons who get your health information may not be required by Federal privacy laws (such as the Privacy Rule) to protect it. Some of those persons may be able to share your information with others without your separate permission.

The results of this study may also be used for teaching, publications, or for presentation at scientific meetings.

Unless you revoke your consent, it will expire at the end of the research study.

Although you may revoke consent to participation in this research at any time and in any format, you must revoke authorization for use or disclosure of your health information in writing. To revoke your authorization, write to:

PI’s Name: Amber Leaver, PhD
Institution: Northwestern University

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Department: Radiology
Address: 737 N Michigan Ave Ste 1600, Chicago IL 60611

You do not have to authorize the use or disclosure of your health information; however, you will not be allowed to take part in the optional hearing test for this research study. If you do not authorize the use or disclosure of your health information, it will not affect your treatment by health care providers, or the payment or enrollment in any health plans, or affect your eligibility for benefits.

A copy of this signed consent document, information about this study, and the results of any test or procedure done may be included in your medical records and may be seen by your insurance company.

Optional Elements:
The following research activities are optional, meaning that you do not have to agree to them in order to participate in the research study. Please indicate your willingness to participate in these optional activities by placing your initials next to each activity.

I agree       I disagree

The researcher may contact me in the future to see whether I am interested in participating in other research studies by the Principal Investigator of this study.

Your signature documents your permission to take part in this research. You will be provided a copy of this signed document.

_______________________________________________      __________________
Signature of Participant                                                               Date

_______________________________________________
Printed Name of Participant

_______________________________________________      __________________
Signature of Person Obtaining Consent                                     Date

____________________________________________
Printed Name of Person Obtaining Consent

IRB #: STU00215708 Approved by NU IRB for use on or after 10/19/2021 through 10/17/2022.