FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

CONSENT FORM

TITLE: Transcranial Magnetic Stimulation for Adolescent Depression

SPONSOR: CHAS/ACHF

INVESTIGATORS: Drs. Frank MacMaster, Adam Kirton, Glenda MacQueen, Chris Wilkes, Vina Goghari, and Matt Hill

Main contact telephone number: 403-955-2784

This consent form is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Take the time to read this carefully and to understand any accompanying information. You will receive a copy of this form.

BACKGROUND

Mood disorders, like major depression (or MDD), are a leading source of disease burden in Canada and the world. MDD affects over 2 million Canadians, and often starts during adolescence. MDD is characterized by depressed mood, loss of interest/pleasure, feelings of guilt/low self-worth, disturbed sleep or appetite, low energy, and poor concentration. Treatment options for MDD are limited – in number and effectiveness. One potential treatment for adolescent MDD is repetitive transcranial magnetic stimulation (rTMS). rTMS use brief magnetic pulses to change function in a selected part of the brain.

The purpose of this study is to determine the effect of three weeks of rTMS on depressive symptoms and the brain in adolescents and young adults with major depressive disorder.

If you have MDD, you will be asked to participate in (1) a mental health check, blood sample, brain function testing and a brain imaging (MRI) scan at baseline and after the rTMS intervention, and (2) a trial of rTMS and short clinical assessments for three weeks (15 days of treatment).

If you have no history of any psychiatric illness, you will only be asked to participate in a clinical and neuropsychological assessment and an MRI scan.

We expect to enroll 75 participants in this study between the ages of 12 to 21. Fifty will have treatment resistant major depressive disorder and twenty-five will have no history of any psychiatric illness.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this study is to determine the effect of rTMS on depressive symptoms and the brain in adolescents with major depressive disorder.

WHAT WOULD I HAVE TO DO?

(1) Mental Health Check (2 – 3 hours)

- You will be asked questions about your thoughts and feelings.
- You will be asked questions about your lifetime psychiatric history, which will also include answering a number of questions about your life and health, and your family history of psychiatric illness.
- Assessment of your current mood during your first visit.
- You will be asked to complete questionnaires to evaluate anxiety, personality and the effects of the illness on your quality of life.
- A short reading test, a questionnaire to establish whether you are right- or left- handed and your height and weight.
- You will be asked about your medical history including history of head injury. You will be asked about medications you may be using.

(2) Brain Function Testing (2 – 3 hours)

- You will be asked to do a short set of neuropsychological tests with a psychologist.
- You will be also asked to participate in a series of short computerized tests of spatial navigation and memory.

(3) Brain Imaging Scan (1 – 2 hours)

- You will be asked to undergo an MRI Scan at the Alberta Children's Hospital.
- For most of the scan you will simply have to lay still.
- During the task in the scanner you will be asked to respond to these pictures and sentences by pressing appropriate buttons.
- People without a psychiatric history and people with MDD will be asked to undergo a scan at baseline. People with MDD will also be asked to undergo a second scan after the rTMS intervention is complete.

Information about the MRI

Functional magnetic brain imaging (fMRI) is a safe and non-invasive procedure. An fMRI scan is a test that produces images very similar to x-ray pictures. We use fMRI to help improve our understanding of the way the brain works.

The use of fMRI helps us understand how the brain works in people who are affected by MDD, how that differs from people without these problems and how that is affected by interventions like rTMS. fMRI uses a large magnet and does not use any radiation. You will lie on a table that will move you into the scanner for about one hour. You will be asked to lie still during the scan. The scanner makes loud, banging sounds but you will be wearing protective earplugs. You will be able to talk to and hear the replies of the technician and researcher who is performing the scan. Because you must lie with your head and neck inside the scanner tube, you may become anxious in the enclosed space. Some participants may experience claustrophobic feelings (a fear of enclosed spaces) while in the scanner. Should you feel claustrophobic or as though you cannot tolerate remaining in the scanner for any reason, you can interrupt the study and rest outside the scanner. You are always free to terminate the procedure if you choose.

(4) Blood Sample (>10 minutes)

- Specially trained personnel will collect three tubes of blood.
- The total amount of blood is a little over 1 teaspoon (5.5ml).

(5) rTMS Intervention (1 hour, 5 days a week for three weeks)

- People without a psychiatric history will not participate in this part of the study as it is designed to treat symptoms of MDD.
- You will be asked to undergo rTMS treatment at the Alberta Children's Hospital.
- For the rTMS treatment you will be asked to be still.

Information about the rTMS

Applying TMS repetitively to specific brain regions may improve the function of those regions. This approach has shown encouraging results over the last several years in both adults and older youth with MDD. We suspect young brains respond best to these types of treatments. These treatments are safe and well tolerated in adolescents.

WHAT ARE THE RISKS?

Mental Health Check

- You may feel emotional discomfort (e.g. embarrassment or anxiety) as a result of psychiatric evaluations or assessments. However, each of the measures chosen for this study has been used extensively with hundreds of children, teenagers and young adults without adverse effects. The researchers are trained to administer evaluations and assessments in a way that will minimize your discomfort. You may stop the evaluation or assessments at any time if you feel uncomfortable.
- We follow strict procedures for record keeping in order to maintain that any information that is related to you is kept as confidential (private).

Brain Function Testing

- You may feel frustrated while performing the tasks.

Brain Imaging Scan

- The risks associated with having an fMRI brain scan are minimal. There are no known risks from exposure to the magnetic field used for these tests.
- If you have metallic objects in your body, we will not allow you to take part in the study because the strong magnetic field in the scanner could cause these objects to change position, and may cause injuries.
- No one knows if there is any risk from the magnet to a fetus, therefore, we will not allow you to take part in the study if you are pregnant.
- The MRI machine is loud when turned on, and may cause some discomfort. Therefore you will be given, and must wear, ear plugs.
- The space inside the MRI machine is fairly limited, so some people may feel claustrophobic. Should you find the small space to be a problem during the procedures, you can inform us, and the scan will be stopped.
- There is an intercom system that allows communication with the researcher even during the scan. You will also be given an 'emergency' squeeze-ball so that you may stop the testing if you become uncomfortable or anxious at any time.
- The MRI scans in this study are done to answer research questions and are not the type that would usually reveal medical conditions. In the unlikely event that we detect an abnormality in your scan, the technician will refer your scans (without your name) to a specialist for further examination as soon as possible after the scan. We would then contact you and ask you to follow up with your doctor.
- The results of your research MRI scan will not become part of your hospital record.

Blood Sample

- There is a possibility of bruising or swelling while giving blood, or some other discomforts at the site where blood is drawn and there may be minimal chance of infection, but these discomforts are brief and transient.

rTMS Intervention

- There is a very small risk of seizures associated with TMS. A seizure is like a discharge of too much electricity from the brain. It can make your muscles twitch and alter your awareness. Most seizures only last for seconds and longer ones can be stopped with medication. Typical seizures do not cause brain damage. Seizures have been reported in only a few people out of thousands who have received TMS and many had pre-existing seizure disorders. A recent study did not report a single seizure in over 1000 children given TMS. *Finally, your child will be in a hospital under the care of a doctor experienced in treating seizures who will make sure they are okay in the very unlikely event this was to occur.*

- Brief sensations described as headache or tingling sensations are each reported in about 1 of every 20 children studied with TMS. The discomfort was rated as mild and a long car ride was described as being more unpleasant.

WILL I BENEFIT IF I TAKE PART?

Based on similar previous studies in adults and youth with MDD, we hope that treatment with rTMS will improve your child's MDD symptoms. The completion of this study may lead to better treatments in the future that could produce longer lasting benefits. Participation also offers numerous benefits to other youth and adults with MDD as well as the medical community and society. The more we are able to attempt new treatment ideas, the brighter the future will be for everyone with MDD.

DO I HAVE TO PARTICIPATE?

Alternatives
The only alternative is to not participate in the study.

Voluntariness and Withdrawal of consent
Your participation in this study is voluntary and you may withdraw from the study at any time without jeopardizing your health care. If you decide to withdraw from the study, please notify Dr. Frank MacMaster. Researchers or research staff involved in this study can withdraw you from the study for any reason.

If any new information becomes available that might affect your willingness to participate in the study, you will be informed as soon as possible.

WHAT ELSE DOES MY PARTICIPATION INVOLVE?

Nothing.

WILL I BE PAID FOR PARTICIPATING, OR DO I HAVE TO PAY FOR ANYTHING?

We will compensate you for any expenses, such as transportation costs, that may occur to you, on the days that you will be participating in the study up to $100 (due to the large number of visits and greater inconvenience).

WILL MY RECORDS BE KEPT PRIVATE?

Any information about you obtained from or for this research study will be kept as confidential (private) as possible. All records pertaining to your involvement in this research study will be stored in a locked file cabinet and all data will be kept in properly secured computer databases. A Study identification (ID) number will be used on any research records (your name will not be on these records).

A master list connecting your name to your Study ID number will be kept in a separate, secure location. University policy requires that we keep your research records for a period of at least five years after final publication of the study results. Access to your identifying information will be limited to the researchers listed on the first page of this form. Research records may be released to other investigators for research related to mood disorders. These records will not contain any personal identifiers. You will not be identified by name in any publication of the research results.

If you participate, your reports related to this research will only be made available to the regulatory authorities including the University of Calgary Conjoint Health Research Ethics Board and the Health Protection Branch of Canada. These organizations will treat such information with strict confidentially. This means that no records bearing your name will be provided to anyone with exception of the regulatory authorities, where necessary and investigators involved in this study.

All information about you will be identified only by a code number. Data obtained from this study may be stored for future analysis. However, any new research arising from this study will be submitted to the Research Ethics Board for approval.

If you decide to revoke this consent at anytime, your research data will be destroyed, wherever possible. To revoke your consent, notify Dr. Frank MacMaster in writing.

IF I SUFFER A RESEARCH-RELATED INJURY, WILL I BE COMPENSATED?

In the event that you suffer injury as a result of participating in this research, no compensation will be provided to you by the Cuthbertson and Fischer Chair in Pediatric Mental Health, the University of Calgary, the Alberta Health Services or the Researchers. You still have all your legal rights. Nothing said in this consent form alters your right to seek damages.

SIGNATURES

Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the investigators or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time without jeopardizing your health care. If you have further questions concerning matters related to this research, please contact:

Dr. Frank MacMaster (403) 955-2784

If you have any questions concerning your rights as a possible participant in this research, please contact The Chair, Conjoint Health Research Ethics Board, University of Calgary, at 403-220-7990.

Participant's Name	Signature and Date
Investigator/Delegate's Name	Signature and Date
Witness' Name	Signature and Date

The University of Calgary Conjoint Health Research Ethics Board has approved this research study.

A signed copy of this consent form has been given to you to keep for your records and reference.