



What is rTMS?

Transcranial Magnetic Stimulation (TMS) involves a series of short magnetic pulses directed to the brain to stimulate nerve cells. Since 1985, research has been conducted with TMS to understand and treat a number of neurological conditions (i.e., migraines, Parkinson's disease, tinnitus) and psychiatric conditions (i.e., depression and auditory hallucinations in individuals with schizophrenia).

Most recently, researchers have been focusing on the use of TMS as a treatment option for executive function deficits.

The magnetic energy released from the TMS device passes through the skull easily. Stimulation is limited to a small area and therefore has little effect on the surrounding brain tissue.

How is it done and how long does it take?

The client remains awake during the procedure and can return to normal daily activities immediately following (no medication or anesthesia is required).

The client will be sitting comfortably in a recliner throughout the session.

A session is approximately 50 minutes long.

WHERE TO GET MORE INFORMATION

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If you qualify or have patients that do please contact Katharine Coons at CAMH:

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The Temerty Centre for Therapeutic Brain Intervention is part of the Mood and Anxiety Disorders Program at CAMH. Primarily comprised of research laboratories, the centre conducts innovative research on the use of non-invasive brain stimulation to treat psychiatric disorders and optimize clinical care. Encompassing Repetitive Transcranial Magnetic Stimulation, Electroconvulsive Therapy, and Magnetic Seizure Therapy, the Temerty Centre is striving to make these treatments widely available in Canada and beyond.

camh
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Research Using REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION to Enhance Executive Functioning in Autism Spectrum Disorder

 **Campbell Family**
Mental Health Research Institute

REB Protocol #119/2013

Purpose of this Study

To evaluate rTMS as a novel therapeutic treatment for executive function deficits in autism spectrum disorder.

Study Details

Length of Study: About 1 month

Several visits and appointments during this study including daily rTMS sessions (5 days a week for 4 weeks)

This study includes:

- Daily rTMS sessions (20 total)
- Urine test
- MRI (x2)
- Neuropsychological testing (x2)
- Surveys and questionnaires
- One follow-up visit one month following completion of rTMS sessions

General Information

You will be compensated \$10/hour of participation in the present study

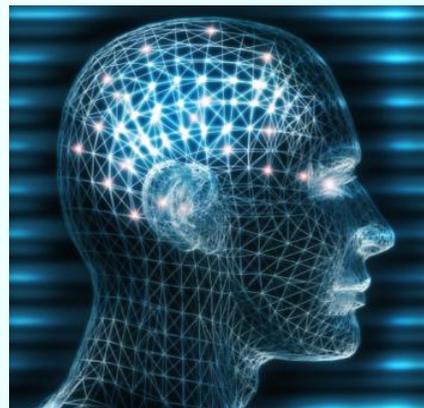
Some individuals will be picked by chance to receive active rTMS and some will receive sham rTMS – sham will feel the same but there will be no stimulation to the brain

What are the Benefits?

If rTMS is successful, patients may benefit from enhancement of cognitive performance and perhaps symptom improvement. Previous studies have shown improvement in cognitive performance with rTMS.

What are the risks of the study?

- Seizure: very rare – we follow safety guidelines and control stimulation for rTMS so it is well below the maximum limits.
- Fainting
- Headache: you can take Tylenol if you get a headache.
- Upset feelings/ Frustration: some questionnaires might make you feel uncomfortable or frustrated.
- Sleepiness



Confidentiality

This study has been approved by the Ethics Committee of the Centre for Addiction and Mental Health. All information obtained during the study will remain strictly confidential.

Do you qualify?

Inclusion Criteria:

- Adolescents and adults aged 16-25
- Current diagnosis of autism spectrum disorder
- Verbal and Fluent in English language
- IQ > 80 (average intelligence)
- Current executive function challenges (e.g., with planning, organizing, completing tasks)

Exclusion Criteria:

- Current or past substance abuse or dependence in the last 6 months
- Any unstable medical or neurological illness
- History of rTMS
- Presence or history of epilepsy or other seizure disorders
- Cardiac pacemaker, cochlear implant, implanted electronic device or non-electric metallic implant
- Pregnant or planning on getting pregnant