

Official Title: Identifying the Neural Correlates of Mental Simulation in Multi-Step Planning

NCT Number: NCT07293637

Document Date: 2025-12-16



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Consent form for MEG: IRB-FY2024-9110

Introduction

You have been invited to take part in a study to learn more about the brain during learning, memory, and decision-making.

Participation in this study will involve a single MEG session lasting 2 hours or less. There are no known health risks associated with MEG recording. These procedures do not involve injections or radiation exposure. The MEG channels only record activity and do not produce any sensation. However, participants may experience feelings of claustrophobia or other discomfort during the procedure. Although you will receive no direct benefits, this research may help us better understand the nature of learning and decision making.

You will receive \$20/hour for participation. Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. Please read the rest of this consent form for more information about the study.

Procedure

This study will be conducted by Dr. Marcelo Mattar of the Department of Psychology at New York University.

You must be 18 years or older to participate in this study. If you agree to take part in the study, you will be asked to do the following:

- Remove any metal jewelry and clothing containing metal. If you have a removable denture or retainer, you may also be asked to temporarily remove this for the study.
- Have 3-5 very small marker coils attached to your head.
- Sit very still with your head supported while a 3-D spatial digitizing machine records the positions of these marker coils, certain landmarks on your head, and a partial scan of your face.
- Enter a special magnetically shielded room that contains the MEG instrument. This room allows for free communication with the experimenters, who generally remain outside the room during the actual scanning. Your brain activity will be recorded while you lie on your back. Your head will rest on a thermos containing liquid helium and magnetic sensor electronics. These sensors will measure the magnetic field that is created by the electrical activity in your brain.
- Attend to and/or make decisions about visual stimuli. Visual stimuli will be presented on a screen that can be seen with a mirror above your eyes. Any responses will be made using a button box.
- Have your spoken responses audio-recorded. You may review these recordings and request that all or any portion of the recordings be destroyed.
- Have your left eye tracked via a fiber optic camera located approximately 2 feet above the MEG scanner bed. You may be asked to follow dots on the screen with

your eyes before the study, and at approximately 10 minute intervals during the study.

- You will be given a break from the task approximately every ten minutes. You will be asked to lie quietly on your back during the entire MEG recording and not to move your head unless instructed to do so.

Participation in this study will involve up to 2 hours of your time in total. The study will consist of 1 scanning session. The session will take between 0.5 and 2 hours. In total, 1-1.5 hours of your time will be devoted to the MEG scan and an additional 1 – 0.5 hours will be allocated to study set up and behavioral tasks performed outside the scanner.

During your MEG session, occasional breaks of a few minutes will be provided. You will remain in the MEG room during breaks, but you may close your eyes and rest. You may rest for as long as you need to be ready to continue the session.

Risks

There are no known risks associated with your participation in this research beyond those of everyday life. There are no known health risks associated with MEG. These procedures do not involve injections or radiation exposure. The MEG channels only record activity and do not produce any sensation. You may, however, experience feelings of claustrophobia or other discomfort during the procedure. Marker coils will be attached to your head using surgical tape, which may be a discomfort for some participants. There may be other side effects that are not known and have not been anticipated by the experimenters.

Benefits

Although you will receive no direct benefits, this research may help the investigator better understand learning, memory, and decision-making processes in the brain.

Cost and Compensation

You will be paid \$20/hour for participation in this study. You will also receive any monetary bonuses you earned during the task. Should you withdraw before the end of the study, partial payment will be given based on the time you have spent participating. There will be no cost to you associated with participation in this study.

If you earn (or if you are compensated) in excess of \$600 from New York University, within any calendar year, for participation as a research subject, you will need to report the earnings/payments as income on your taxes, as NYU will be required to report the payments to the IRS as other income and will issue you a 1099 form.

Rights

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. Nonparticipation or withdrawal will not affect your grades or academic standing.

If there is anything about the study or taking part in it that is unclear or that you do not understand, or if you have questions or wish to report a research-related problem, you may contact the principal

investigator, Dr. Marcelo Mattar at (212) 998-7920, marcelo.mattar@nyu.edu, 6 Washington Place, Room 863, New York, NY 10003.

For questions about your rights as a research participant, you may contact the Institutional Review Board (IRB), 665 Broadway, Suite 804, New York University, (212) 998-4808 or ask.humansubjects@nyu.edu. Please reference the study # (IRB-FY2024-9110) when contacting the IRB.

Confidentiality

This research is covered by a Certificate of Confidentiality from the National Institutes of Health. Researchers with this Certificate will not disclose or use information that may identify you in any federal, state, or local civil, criminal, administrative, legislative, or other action, suit, or proceeding, even if there is a court subpoena.

Exceptions include:

- A federal, state, or local law requires disclosure.
- Your explicit approval for the researchers to release your name and/or personally identifiable information.

Confidentiality of your research records will be strictly maintained. Information will be stored in the investigator's file and will be identified by an anonymous code number. The code key connecting your identifiable information to your data will be kept in a separate, secure location. Information not containing identifiers may be used in future research or shared with other researchers without your additional consent.

The results of this study may be published in a book, journal, or used for teaching purposes. However, your name or other identifiers that could identify you will not be used in any publication or teaching materials without your specific permission, which will be requested in writing.

Agreement to Participate

YOUR SIGNATURE INDICATES THAT YOU HAVE READ THE ABOVE INFORMATION, THAT YOU HAVE DISCUSSED THIS STUDY WITH THE PERSON OBTAINING CONSENT, THAT YOU HAVE DECIDED TO PARTICIPATE BASED ON THE INFORMATION PROVIDED, THAT YOU ARE 18 YEARS OF AGE OR OLDER, AND THAT A COPY OF THIS CONSENT DOCUMENT HAS BEEN GIVEN TO YOU TO KEEP.

Participant's Signature

Date

Participant's Printed Name

