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# *ETHICS REVIEW APPLICATION FORM FOR*

# *SUPERVISED AND SPONSORED RESEARCHERS*

(For use by graduate students, post-docs, residents, external investigators, and visiting professors/researchers)

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| **SECTION A – GENERAL INFORMATION** |

1. **TITLE OF RESEARCH PROJECT**

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| Highway to the zone: Neurocognitive mechanisms behind reduced attentional blink in meditators |

**2. INVESTIGATOR INFORMATION**

**Investigator:**

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| Title (e.g., Dr., Ms., etc.): Mr | Name: John Eusebio |
| Department (or organization if not affiliated with U of T): Psychology | |
| Mailing address: 1265 Military Trail, Toronto, ON, M1C 1A4 | |
| Phone: 416-357-3158 | Institutional e-mail: john.eusebio@mail.utoronto.ca |

**Level of Project:**

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| --- |
| Student Research: Doctoral  Masters |
| Post-Doctoral Research  Visiting professor/External researcher  Course Based |
| CBR/CBPR  Other  (specify:      ) |

**Supervisor/Sponsor (must be a UofT faculty member with research privileges):**

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| --- | --- | --- |
| Title: Dr | Name: Michael Inzlicht | |
| Department: Psychology | | |
| Mailing address: 1265 Military Trail, Toronto, ON, M1C 1A4 | | |
| Phone: 416-208-4826 | | Institutional e-mail: michael.inzlicht@utoronto.ca |

**Co-Investigators:**

Are co-investigators involved? Yes  No

|  |  |  |
| --- | --- | --- |
| Title: | Name: | |
| Department (or organization if not affiliated with U of T): | | |
| Mailing address: | | |
| Phone: | | Institutional e-mail: |

***Please append additional pages with co-investigators’ names if necessary.***

1. **UNIVERSITY OF TORONTO RESEARCH ETHICS BOARD:**

Social Sciences, Humanities and Education  Health Sciences  HIV/AIDS

To determine which Research Ethics Board (REB) your application should be submitted, please consult: <http://www.research.utoronto.ca/about/boards-and-committees/research-ethics-boards-reb/>

1. **LOCATION(S) WHERE THE RESEARCH WILL BE CONDUCTED:**

(a) If the research is to be conducted at a site requiring administrative approval/consent (e.g., in a school), please include all administrative consent letters. It is the responsibility of the researcher to determine what other means of approval are required, and to obtain approval prior to starting the project.

University of Toronto  (If this research involves U of T students, faculty or staff as participants, please contact the Provost’s office for approval)

Hospital  specify site(s)

School board or community agency  specify site(s)

Community within the GTA  specify site(s)

International  specify site(s)

Other  specify site(s)      

(b) For all off-campus research, whether in the local community or internationally, the researcher should consult with the [Framework on Off-Campus Safety](http://www.cie.utoronto.ca/safety-abroad/Framework-on-Off-Campus-Safety.aspx), [Guidelines on Off-Campus Safety](http://www.cie.utoronto.ca/safety-abroad/Off-Campus-Safety-Guidelines.aspx), and [Guidelines on Safety in Field for institutional requirements](http://www.ehs.utoronto.ca/Assets/ehs+Digital+Assets/Guidelines+on+Safety+in+Field+Research.pdf).

(c) **The University of Toronto has an agreement with the Toronto Academic Health Sciences Network (TAHSN) hospitals regarding ethics review of hospital-based research where the University plays a peripheral role. Based on this agreement, certain hospital-based research may not require ethics review at the University of Toronto. If your research is based at a TAHSN hospital, please consult the following document to determine whether or not your research requires review at the University of Toronto.** <http://www.research.utoronto.ca/faculty-and-staff/research-ethics-and-protections/humans-in-research/> - “Administrative review” heading toward the bottom of the page.

**5. OTHER RESEARCH ETHICS BOARD APPROVAL(S)**

(a) Does the research involve another institution or site? Yes  No

(b) Has any other REB approved this project? Yes  No

If **Yes**, please provide a copy of the approval letter upon submission of this application.

If **No**, will any other REB be asked for approval?

Yes        (please specify which REB) No

**6. FUNDING OF THIS PROJECT**

(a)

|  |  |  |
| --- | --- | --- |
| Funding Status | Source and Type | Details |
| Funded | Agency: | Fund #: 4      (6 digits) |
| Agency: | Fund # :4      (6 digits) |
| Applied for funding | Agency: | Submission date: |
| Agency: | Submission date: |
| Unfunded  If unfunded, please explain why no funding is needed: Have not applied for funding | | |

**7. CONTRACTS AND AGREEMENTS**

(a) Is this research to be carried out as a contract or under a research agreement?Yes  No

If yes, is there a University of Toronto funding or non-funded agreement associated with the research? Yes  No

If **Yes,** please append a copy of the agreement with of this application.

Is there any aspect of the contract that could put any member of the research team in a potential conflict of interest? Yes  No

If yes, please elaborate under #10.

(b) Is this a Division 5, Health Canada regulated clinical trial that involves drugs, devices or natural health products?

Yes  No  (if so, the application must be reviewed by the full board)

**8. PROJECT START AND END DATES**

Estimated start date for the component of this project that involves human participants or data: February 2018

Estimated completion date of involvement of human participants or data for this project: December 2018

**9. SCHOLARLY REVIEW:**

1. Please check one:

1. The research has undergone scholarly review by thesis committee, departmental review committee, peer review committee or some other equivalent (Specify review type – e.g., departmental research committee, supervisor, CIHR, SSHRC, OHTN, etc.):

1. The research will undergo scholarly review prior to funding

(Specify review committee – e.g., departmental research committee, SSHRC, CIHR peer-review committee, etc.):

1. The research will not undergo scholarly review (Please note that all research greater than minimal risk requires scholarly review)
2. If box I or II above was checked, please specify if:

The review was/will be specific to this application

The review was/will be part of a larger grant

**10. CONFLICTS OF INTEREST**

(a) Will the researcher(s), members of the research team, and/or their partners or immediate family members:

(i) Receive any personal benefits (e.g., financial benefit such as remuneration, intellectual property rights, rights of employment, consultancies, board membership, share ownership, stock options, etc.) as a result of or in connection with this study? Yes  No

(ii) If **Yes**, please provide further details and discuss how any real, potential or perceived conflicts of interest will be managed during the project. (Do not include conference and travel expense coverage, or other benefits which are considered standard for the conduct of research.)

NA

(b) Describe any restrictions regarding access to or disclosure of information (during or at the end of the study) that have been placed on the investigator(s). These restrictions include controls placed by the sponsor, funding body, advisory or steering committee.

NA

(c) Where relevant, please explain any pre-existing relationship between the researcher(s) and the researched (e.g., instructor-student; manager-employee; clinician-patient; minister-congregant). Please pay special attention to relationships in which there may be a power differential – actual or perceived.

NA

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| **SECTION B – SUMMARY OF THE PROPOSED RESEARCH** |

**11. RATIONALE**

Describe the purpose and scholarly rationale for the proposed project. State the hypotheses/research questions to be examined. The rationale for doing the study must be clear. Please include references in this section.



**12. METHODS**

(a) Please describe all formal and informal procedures to be used. Describe the data to be collected, where and how they will be obtained and how they will be analyzed.



(b) Attach a copy of all questionnaires, interview guides and/or any other instruments.

(c) Include a **list of appendices** here for all additional materials submitted (e.g., Appendix A – Informed Consent; Appendix B – Interview Guide, etc.):

Appendix A – Informed Consent for Mindfulness Meditation group

Appendix B – Debriefing Form for Somatic Relaxation group

Appendix C – Toronto Mindfulness Scale (TMS)

Appendix D – The Big Five Inventory (BFI)

**13. PARTICIPANTS, DATA AND/OR BIOLOGICAL MATERIALS**

(a) Describe the participants to be recruited list the eligibility criteria, and indicate the estimated sample size (i.e. min-max # of participants). Where applicable, please also provide a rationale for your choice in sample size and/or sample size calculation.

Participants will be university students enrolled in the psychology department’s subject pool and they may be of any age, any gender, and from any country. The only requirement is that they be healthy, not currently suffering from any psychiatric or neurological illness, and be meditation-naïve (e.g., have meditated less than an hour in the past year). We propose a sample size of N = 75.

(b) Where the research involves extraction or collection of personally identifiable information, please describe the purpose, from whom the information will be obtained, what it will include, and how permission to access the data is being sought. (Strategies for recruitment are to be described in section #15.)

Identifying information (e.g., name, address) will not be recorded.

(c) Is there any group or individual-level vulnerability related to the research that needs to be mitigated (for example, difficulties understanding informed consent, history of exploitation by researchers, power differential between the researcher and the potential participant)? If so, please provide further details below.

none

(d) If your research involves the collection and/or use of biological materials (e.g. blood, saliva, urine, teeth, etc.), please provide details below. Be sure to indicate how the samples will be collected and by whom.

NA

**14. EXPERIENCE OF INVESTIGATORS WITH THIS TYPE OF RESEARCH**

(a) Please provide a brief description of previous experience by (i) the principal investigator/supervisor or sponsor, (ii) the research team and (iii) the people who will have direct contact with the participants. If there has not been previous experience with this type of research, please describe how the principal investigator/research team will be prepared.

(i) The supervisor of this laboratory, Michael Inzlicht, has been conducting this type of research (e.g., EEG, meditation, and psychophysiology) for over 15 years, with no complaints of any of the procedures. (ii and iii) All research team members will be fully trained on the procedures before conducting the experiments. All procedures and task paradigms will first be tried with consenting and fully-informed members of the research team acting in the role of the subject.

**15. RECRUITMENT OF PARTICIPANTS**

Where there is recruitment, please describe how, by whom, and from where the participants will be recruited. Where participant observation is to be used, please explain the form of insertion of the researcher into the research setting (e.g., living in a community, visiting on a bi-weekly basis, attending organized functions). If relevant, describe any translation of recruitment materials, how this will occur and whether or not those people responsible for recruitment will speak the language of the participants.

Participants will be recruited through the psychology participant pool. Participation opportunity will be posted one week before the study takes place.

**Attach a copy of all posters, advertisements, flyers, letters, e-mail text, or telephone scripts to be used for recruitment as appendices.**

**16. COMPENSATION  
  
Please see U of T’s** [**Compensation and Reimbursement Guidelines**](http://www.research.utoronto.ca/wp-content/uploads/2010/01/Guidelines-for-Compensation-and-Reimbursement-of-Research-Participants-Approved-Feb-16-11.pdf)**.**

(a) Will participants receive compensation for participation?

FinancialYes  No

In-kind Yes  No

Other Yes  No

(b) If **Yes**, please provide details and justification for the amount or the value of the compensation offered.

Participants will receive partial course credit. A one-hour study offers 1.0 research participation credits; a two-hour study offers 2.0 credits. This is part of the standard system for the department’s subject pool. In addition, participants not currently enrolled in an undergraduate class but who still wish to participate may be financially compensated with $20. This mode of compensation will be clearly explained to participants before they provide informed consent (see Appendix A).

(c) If **No**, please explain why compensation is not possible or appropriate.

NA

(d) Where there is a withdrawal clause in the research procedure, if participants choose to withdraw, how will compensation be affected?

Participants may withdraw at any time during the study and will receive no loss in compensation.

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| **SECTION C –DESCRIPTION OF THE RISKS AND BENEFITS OF THE PROPOSED RESEARCH** |

**17. POSSIBLE RISKS**

(a) Please indicate all potential risks to participants as individuals or as members of a community that may arise from this research:

(i) Physical risks (e.g., any bodily contact or administration of any substance): Yes  No

(ii) Psychological/emotional risks (e.g., feeling uncomfortable, embarrassed, or upset): Yes  No

(iii) Social risks (e.g., loss of status, privacy and/or reputation): Yes  No

(iv) Legal risks (e.g., apprehension or arrest, subpoena): Yes  No

(b) Please briefly describe each of the risks noted above and outline the steps that will be taken to manage and/or minimize them.

There are minimal physical risks involved because the electroencephalographic (EEG) procedure is entirely non-invasive, virtually risk-free, and not painful. The participant wears a cap, with electrodes embedded within the cap. The electrodes are placed against the scalp with electrolyte gel applied to improve conductivity. Although there is a potential for participants to feel uncomfortable having gel put in their hair, our laboratory’s standard procedure has resulted in no complaints about messiness in any study. Firstly, the advertisements for the study will indicate that this is an EEG study and will involve electrolyte gel on your head and in your hair. Secondly, when participants arrive, they are given a detailed walk-through where we describe the study thoroughly (including that there will be gel in their hair). Thirdly, after the study is over, participants will be directed to a sink and given shampoo, towels, and styling implements so that they can return the appearance of their hair to normal before leaving the lab.

**18. POSSIBLE BENEFITS**

* Describe any potential direct benefits to participants from their involvement in the project
* Describe any potential direct benefits to the community (e.g., capacity building)
* Comment on the potential benefits to the scientific/scholarly community or society that would justify involvement of participants in this study

Participants themselves derive benefit in two ways in addition to the compensation described above. Firstly, this study will provide participants the opportunity to view, firsthand, the type of research conducted by psychologists. During the debrief, the scientific theories behind the study will be discussed, and participants will be able to ask questions and thus learn more about both the scientific process and this research discipline. Secondly, the participants will indirectly benefit from the benefits to the scientific community and society. Lastly, participants may also benefit from being introduced to mindfulness meditation techniques, which have been shown to have notable emotional and cognitive benefits.

Our study will contribute to the fields of psychology and cognitive neuroscience. This will be one of the first studies exploring the neurological mechanisms behind the proposed diffuse attentional processing, and will be the first study to investigate the “in-the-zone” processing state using electroencephalogram (EEG). Using these methods, we hope to uncover the underlying causes behind these phenomena, and bring together mindfulness meditation research and neural network research.

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| **SECTION D – INFORMED CONSENT** |

**19. CONSENT PROCESS**  
(a) Describe the process that will be used to obtain informed consent and explain how it will be recorded.  Please note that it is the quality of the consent, not the form that is important. The goal is to ensure that potential participants understand to what they are consenting.

When participants arrive in our laboratory, they will be given a detailed walk-through where we describe the study procedures thoroughly. After which, they will be asked to provide informed consent (see Appendix A).

(b) If the research involves extraction or collection of personally identifiable information from or about a research participant, please describe how consent from the individuals or authorization from the data custodian (e.g., medical records department, district school board) will be obtained.

NA. All data will be collected directly from the participant and stored anonymously.

**20. CONSENT DOCUMENTS**(a) **Attach an Information Letter/Consent Form**

For details about the required elements in the information letter and consent form, please refer to our informed consent guide ([**http://www.research.utoronto.ca/wp-content/uploads/2010/01/GUIDE-FOR-INFORMED-CONSENT-April-2010.pdf**](http://www.research.utoronto.ca/wp-content/uploads/2010/01/GUIDE-FOR-INFORMED-CONSENT-April-2010.pdf)**)**

**Additional documentation regarding consent should be provided such as:**

* + **screening materials introductory letters, letters of administrative consent or authorization**

(b) If any of the information collected in the screening process - prior to full informed consent to participate in the study - is to be retained from those who are later excluded or refuse to participate in the study, please state how potential participants will be informed of this course of action and whether they will have the right to refuse to allow this information to be kept.

No information will be collected prior to full informed consent to participate in the study (see Consent Form, Appendix A).

**21. COMMUNITY AND/OR ORGANIZATIONAL CONSENT, OR CONSENT BY AN AUTHORIZED PARTY**

(a) If the research is taking place within a community or an organization which requires that formal consent be sought prior to the involvement of individual participants, describe how consent will be obtained and attach any relevant documentation. If consent will not be sought, please provide a justification and describe any alternative forms of consultation that may take place.

NA

(b) If any or all of the participants are children and/or individuals that may lack the capacity to consent, describe the process by which capacity/competency will be assessed and/or, the proposed alternate source of consent.

NA (all participants will be over 18)

(c) If an authorized third party will be used to obtain consent:

i) Submit a copy of the permission/information letter to be provided to the person(s) providing the alternative consent

ii) Describe the assent process for participants and attach the assent letter.

NA

**22. DEBRIEFING and DISSEMINATION**

(a) If deception or intentional non-disclosure will be used in the study, provide justification. Please consult the [Guidelines for the Use of Deception and Debriefing in Research](http://www.research.utoronto.ca/wp-content/uploads/2009/09/Deception_and_Debriefing_Guidelines.pdf)

Intentional non-disclosure will be used because participants’ knowledge of the precise details of the study may influence their behavior during the study and diminish the quality of the results. We will thoroughly debrief our participants after the study is complete (Appendix B).

(b) Please provide a copy of the written debriefing form, if applicable.

(c) If participants and/or communities will be given the option of withdrawing their data following the debriefing, please describe this process.

Participants will have the option of withdrawing their data immediately following the debriefing. After that point, data will have been stored without identifying information, so retrieval for withdrawal may not be possible.

(d) Please describe what information/feedback will be provided to participants and/or communities after their participation in the project is complete (e.g., report, poster presentation, pamphlet, etc.) and note how participants will be able to access this information.

Seeing Debriefing Forms (Appendix B). Participants will also be invited to ask questions or email the experimenter for additional information.

**23. PARTICIPANT WITHDRAWAL**

(a) Where applicable, please describe how participants will be informed of their right to withdraw from the project and outline the procedures that will be followed to allow them to exercise this right.

The informed consent form states that participants are free to withdraw at any time during the study, and will still receive their course credit and any additional compensation. After the procedure is explained, participants will again be told verbally that they are free to withdraw at any point.

(b) Indicate what will be done with the participant’s data and any consequences which withdrawal may have on the participant.

Participants will be explicitly told that there will be no negative consequences for withdrawing from the study. The experimenter will ask if we can keep their data; if they decline, their data will be discarded.

(c) If participants will not have the right to withdraw from the project at all, or beyond a certain point, please explain. Ensure this information is included in the consent process and consent form.

NA. Participants will always have the right to withdraw.

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| **SECTION E – CONFIDENTIALITY AND PRIVACY** |

**24. CONFIDENTIALITY**

Data security measures must be consistent with UT's [*Data Security Standards for Personally Identifiable and Other Confidential Data in Research*.](http://www.research.utoronto.ca/wp-content/uploads/documents/2013/05/datasecurity1.pdf) All identifiable electronic data that is being kept outside of a secure server environment must be encrypted.

(a) Will the data be treated as confidential? Yes  No

(b) Describe the procedures to be used to protect the confidentiality of participants or informants, where applicable

All data will remain confidential. Participants will not be given any questionnaires on which they can sign their name, and their digital responses will never be associated with their name. When reporting the results of the studies, they will be only reported as group means, standard deviations, and correlations, and other aggregate measures. No individual responses will be reported. No identifying information will be reported or collected. In online versions of data, all personally identifying information will be removed.

(c) Describe any limitations to protecting the confidentiality of participants whether due to the law, the methods used, or other reasons (e.g., a duty to report)

NA. Confidentiality will be maintained.

**25. DATA SECURITY, RETENTION AND ACCESS**

(a) Describe how data (including written records, video/audio recordings, artifacts and questionnaires) will be protected during the conduct of the research and dissemination of results.

All materials will be kept in a locked research room, where only trained research assistants and the supervising professor have access. Original copies will be destroyed after 7 years.

(b) Explain how long data or samples will be retained. (If applicable, referring to the standard data retention practice for your discipline) Provide details of their final disposal or storage. Provide a justification if you intend to store your data for an indefinite length of time. If the data may have archival value, discuss how participants will be informed of this possibility during the consent process.

Original copies will be discretely destroyed after 7 years, as recommended by the American Psychological Association. However, some data (excluding all personal information) will have been uploaded to the Open Science Framework (https://osf.io/), and thus will be available for an indefinite amount of time. This is necessary to facilitate the open-science movement, where researchers can check and re-analyze data analyses from other researchers.

(c) If participant anonymity or confidentiality is not appropriate to this research project, please explain.

NA

(d) If data will be shared with other researchers or users, please describe how and where the data will be stored and any restrictions that will be made regarding access.

Data (with all personal identifying information removed, including ‘date of participation’) will be uploaded online to the Open Science Framework (https://osf.io/) where it can be downloaded by other researchers or members of the scientific community in order to confirm that our own analyses were correct and open, as well as to potentially conduct secondary data analyses with permission of the authors. There is a separate consent section (separate signature) for participants to sign to release their data for this purpose. If participants choose to participate in the study but do not release their data, then their participant identification code will be noted and their data will be excluded from the version of the data uploaded to the Open Science Framework.

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| **SECTION F – LEVEL OF RISK AND REVIEW TYPE** |

See the [*Instructions for Ethics Review Submission Form*](http://www.research.utoronto.ca/faculty-and-staff/research-ethics-and-protections/humans-in-research/) for detailed information about the Risk Matrix.

**26. RISK MATRIX: REVIEW TYPE BY GROUP VULNERABILITY and RESEARCH RISK**

1. Indicate the Risk Level for this project by checking the intersecting box

**\_\_\_\_\_\_\_\_\_**\_\_\_\_\_\_\_\_\_\_\_\_\_**Research Risk**\_**\_\_**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Group Vulnerability Low Medium High**

**Low** **1**  **1**  **2**

**Medium** **1**  **2**  **3**

**High** **2**  **3**  **3**

(b) Explain/justify the level of research risk and group vulnerability reported above:

Group vulnerability is low because the populations studied comprise healthy male and female university students. Research risk is also low because participants will complete simple computerized decision-making tasks involving choosing between different options, which are decisions participants encounter in everyday life. Mindfulness Meditation (MM) is unlikely to cause any distress in individuals. On the contrary, MM training has been found to offer notable emotional and cognitive benefits to practioners.

**(Please note that the final determination of Review Type and level of monitoring will be made by the reviewing University of Toronto REB)**

Based on the level of risk, these are the types of ethics review that an application may receive:

**Risk level = 1: Delegated Review; Risk level = 2 or 3: Full Board Review**

**For both delegated and full reviews (SSH&E, HS, or HIV)**, please submit one electronic copy of your application and all appendices (e.g., recruitment, information/consent and debriefing materials, and study instruments) as a **single** Word document or a pdf. *Do not submit your entire research proposal.* Please ensure that the electronic signatures are in place and e-mail to [**new.ethics.protocols@utoronto.ca**](mailto:new.ethics.protocols@utoronto.ca)

**The deadline for delegated review (SSH&E or HS) is EVERY Monday, or first business day of the week, by 4 pm. Information about full REB meeting and submission due dates are posted on our website** ([SSH&E](http://www.research.utoronto.ca/about/boards-and-committees/research-ethics-boards-reb/), [HS](http://www.research.utoronto.ca/about/boards-and-committees/research-ethics-boards-reb/) or [HIV](http://www.research.utoronto.ca/about/boards-and-committees/research-ethics-boards-reb/)).

**HIV REB reviews all applications at full board level but applies proportionate review based on the level of risk.**

**All other submissions (e.g., amendments, adverse events, and continuing review submissions) should be sent to** [**ethics.review@utoronto.ca**](mailto:ethics.review@utoronto.ca)

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| **SECTION G – SIGNATURES** |

**27. PRIVACY REGULATIONS**

**My signature as Investigator, in Section G of this application form, confirms that I am aware of, understand, and will comply with all relevant laws governing the collection and use of personally identifiable information in research.** I understand that for research involving extraction or collection of personally identifiable information, provincial, national and/or international laws may apply and that any apparent mishandling of personally identifiable information must be reported to the Office of Research Ethics.

For U of T **student researchers**, my signature confirms that I am a registered student in good standing with the University of Toronto. My project has been reviewed and approved by my advisory committee or equivalent (where applicable). If my status as a student changes, I will inform the Office of Research Ethics.

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| Signature of Investigator: C:\Users\john\AppData\Local\Packages\Microsoft.Office.OneNote_8wekyb3d8bbwe\TempState\msohtmlclip\clip_image001.png Date: 13-12-17 |

\*\*\*For **Graduate Students**, the signature of the Faculty Supervisor is required. For **Post-Doctoral Fellows** and **Visiting Professors or Researchers**, the signature of the Faculty Sponsor is required. In addition to the supervisor/sponsor, the chair or the dean of the UofT sponsor’s/supervisor’s department is required to approve and sign the form\*\*\*

As the UofT **Faculty Supervisor** of this project, my signature confirms that I have reviewed and approve the scientific merit of the research project and this ethics application submission. I will provide the necessary supervision to the student researcher throughout the project, to ensure that all procedures performed under the research project will be conducted in accordance with relevant University, provincial, national or international policies and regulations that govern research involving human subjects. This includes ensuring that the level of risk inherent to the project is managed by the level of research experience that the student has, combined with the extent of oversight that will be provided by the Faculty Supervisor and/or On-site Supervisor.

As the UofT **Faculty Sponsor** for this project, my signature confirms that I have reviewed and approve of the research project and will assume responsibility, as the University representative, for this research project. I will ensure that all procedures performed under the project will be conducted in accordance with all relevant University, provincial, national or international policies and regulations that govern research involving human participants.

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| Signature of Faculty Supervisor/Sponsor: Date: 18-08-17 |

As the **Departmental Chair/Dean**, my signature confirms that I am aware of the [requirements for scholarly review](http://www.research.utoronto.ca/wp-content/uploads/2012/08/Chair-Reps-on-Protocol-REPAC-approved-April-2012.pdf) and that the ethics application for this research has received appropriate review prior to submission.

In addition, my administrative unit will follow guidelines and procedures to ensure compliance with all relevant University, provincial, national or international policies and regulations that govern research involving human participants. My signature also reflects the willingness of the department, faculty or division to administer the research funds, if there are any, in accordance with University, regulatory agency and sponsor agency policies.

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| Print Name of Departmental Chair/Dean (or designate) :  Signature of Departmental Chair/Dean: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:  (or authorized designate) |

# Psychology_Department_letterhead_Word_10162008_20704PM_LH_ProofAppendix A — Informed Consent

**Information**

You are invited to participate in a research study. The purpose of this study is to determine if relaxation has a meaningful impact on maintaining sustained attention. You will perform a finger-tapping task and a rapid serial visual presentation (RSVP) task in no particular order. During the finger-tapping task you will be asked to tap your finger in a steady rhythm for 4 minutes by pressing the space bar on the keyboard. Try your best to maintain the original rhythm for the entire duration of the task. During the RSVP task, you will be presented with a series of rapidly-presented letters. Within that stream are one or two numbers (1 to 9). You will be asked to make a mental note of the numbers presented, and to indicate at the end of the trial which numbers were shown, and in what order. These responses will be made on a number pad. Sometimes during the trial you may be presented with a blank screen. Please ignore that. This RSVP task should take approximately 11 to 14 minutes.

After completing both tasks, you will be asked to participate in 20 minutes of guided relaxation exercises presented via audio recording. Please follow the instructions provided. Try not to force yourself while doing this. There is no right or wrong way to complete this.

After 20 minutes of relaxation, you will be asked to once again redo the finger tapping and RSVP tasks. The duration of both will be the same as the previous session.

Throughout this study, you will be connected to an electroencephalogram (EEG). There is absolutely no pain involved with being connected to the EEG. You will be asked to wear a cap on your head with a small amount of gel. This cap is connected to the EEG amplifier and allows us to measure your brain activity during the experiment. We will also place small electrodes under your eye, attach these electrodes to the same EEG amplifier, and then measure the strength of your eye-blink response. This too is completely painless. Although the research cannot be fully explained at this time, a complete explanation will be provided at the conclusion of your participation today. The study should take two hours, and you will receive 2.0 research credits for your participation.

**Risks**

Although there are no foreseeable risks involved in participating in this study, you should be aware of a few things. First, EEG studies involve placing electrolyte gel in your hair, and this (i) involves a trained research assistant placing blunt electrodes directly onto (touching) your scalp and (ii) can become messy. Rest assured, however, that you will also have the opportunity at the end of the study to wash, style, and dry your hair.

**Benefits**

You will have the opportunity to observe the methods that researchers use to study the neural and psychophysiological factors related to people’s decision making, thus improving your understanding of psychological research methods. You will also contribute to the body of knowledge of people’s brain and psychophysiology as they make decisions. You will also be exposed to effective relaxation techniques, which are associated with cognitive and emotional benefits.

**Confidentiality**

Your responses will be kept completely confidential. Confidentiality of your research records will be strictly maintained by assigning all the data you provide a code number. Your confidential data will be kept in a locked   
office in the psychology department that can be accessed only by the research supervisor and authorized researchers, and will be destroyed seven years after the completion of this study, in accordance with American Psychological Association guidelines. The results of this study may be reported in conference presentations and journal articles. Note, however, that the responses of individual participants will not be identified in any reports of this research; only aggregated data (e.g., averages from the projected 75 participants) will be reported.

**Compensation**

You will receive 2.0 research credits towards the introduction to psychology extra credit option, and $20 for your participation in this study. If you begin the study but choose to withdraw prior to its completion or ask to have your data deleted, you will still receive your full 2.0 research credit and $20. Of course, once your data have been turned in, it cannot be withdrawn because it is anonymous.

**Contact and Feedback**

If you have questions at any time about the study or the procedures, you may contact the principle researchers, John Eusebio (john.eusebio@mail.utoronto.ca) or Dr. Michael Inzlicht (michael.inzlicht@utoronto.ca), at the Department of Psychology, University of Toronto, Scarborough Campus. This project has been reviewed and approved by the University Research Ethics Board. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the University of Toronto Research Ethics Board (ethics.review@utoronto.ca). If you are interested in viewing the results of this study, please feel free to contact the principal researcher, John Eusebio (john.eusebio@mail.utoronto.ca).

**Participation**

Your participation in this study is completely voluntary. You may withdraw from the study at any time without penalty or loss of benefits to which you are entitled. You are also free to omit the answer to any question.

**Uploading Data to Research Database**

In line with scientific practice and research transparency, the data we collect (responses and any coded data) will be made available on a research forum for open science practice ([https://osf.io/](https://osf.io/%22%20%5Ct%20%22_blank)). All data that is uploaded, including transcribed video/audio files, will be coded scores, and not actual video/audio data itself. In addition, all information/data will be given a random ID and therefore, will not contain any personally identifiable information.

**Consent to Participate**

I have read and understand the above information. I have received a copy of this form. I agree to participate in this study.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Consent to have Data Uploaded to Research Database**





I agree to have my data made available on a research database, which will be accessed by the scientific and psychological academic community. I am aware that any information of my data will not include personally identifiable information.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Appendix B — Debriefing Form

Thank you very much for participating in today’s session. We are very grateful for your feedback and hope you found the experience interesting and enjoyable.

At the beginning of today’s session, we told you we were studying how guided relaxation affects attention. We have some more specific goals that we couldn’t tell you about at the beginning. The reason we concealed our specific purposes is because, often, when people know the exact purpose of a study, they respond in ways that support the hypotheses, rather than responding naturally. We felt that we could obtain natural responses and more valid results if you did not know our full purpose. We hope that you understand our decision and that you do not feel upset about being partially misled.

The primary purpose of our study is to determine if mindfulness meditation induces a more open form of attention, allowing for better recognition and processing of stimuli. Sometimes in our daily life our mind becomes overwhelmed by all that we have process, and we may miss something important by focusing too much on one thing. We used a combination of behavioral methods, as well as electroencephalogram (EEG) to investigate the neural and psychophysiological correlates of human attention. Half of the participants in this study were randomly assigned to mindfulness meditation, and the other have to somatic relaxation.

The finger-tapping task you completed is a deceptively simple task designed to detect the “mode” of processing your brain is using at any given moment. When you press the button at an inconsistent pace (off-rhythm), your brain is likely exerting effort to maintain performance. However, if you keep a steady rhythm, your brain is likely more relaxed and open to experiences. This latter state is known as being “in the zone” (former state is “out of the zone”). The rapid serial visual presentation (RSVP) task is designed to measure how fixated you become on a given stimulus (the first number, T1), and if this fixation prevents you from detecting a stimulus closely following it (the second number, T2). We wanted to investigate if meditation can induce “in-the-zone” processing, and if this processing can help people avoid fixating on T1 and detect T2. We are also investigating the neurological correlates of your behavioural performance and meditation to see what the underlying mechanisms behind this change are. We wanted to see if any changes we may find are unique to meditation, or if simply relaxing is enough.

We believe that meditating induces “in-the-zone” processing via the default mode network – a brain network associated with rest and introspective thought. This mode of processing may be more sustainable, as your brain does not become fatigued by forcefully attending to a single thing, and may leave more resources for other stimuli.

The research is still in progress, so we would really appreciate if you do not tell others about the specific details of this study. If you have any other questions, please feel free to ask or you may contact the researchers, John Eusebio (john.eusebio@mail.utoronto.ca) or Dr. Michael Inzlicht (michael.inzlicht@utoronto.ca), at the Department of Psychology, University of Toronto, Scarborough Campus.

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the University of Toronto Research Ethics Board, [ethics.review@utoronto.ca](https://utoronto-my.sharepoint.com/personal/john_eusebio_mail_utoronto_ca/Documents/Labs/Inzlicht%20Lab/outside_project/ethics/ethics.review@utoronto.ca).

Thank you again for participating!

Appendix C – Toronto Mindfulness Scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Instructions**: We are interested in what you just experienced. Below is a list of things that people sometimes experience. Please read each statement. Next to each statement are five choices: “not at all,” “a little,” moderately,” “quite a bit,” and “very much.” Please indicate the extent to which you agree with each statement. In other words, how well does the statement describe what you just experienced, just now? | **Not at all** | **A little** | **Moderately** | **Quite a bit** | **Very much** |
| 1. I experienced myself as separate from my changing thoughts and feelings. | 0 | 1 | 2 | 3 | 4 |
| 1. I was more concerned with being open to my experiences than controlling or changing them. | 0 | 1 | 2 | 3 | 4 |
| 1. I was curious about what I might learn about myself by taking notice of how I react to certain thoughts, feelings or sensations. | 0 | 1 | 2 | 3 | 4 |
| 1. I experienced my thoughts more as events in my mind than as a necessarily accurate reflection of the way things ‘really’ are. | 0 | 1 | 2 | 3 | 4 |
| 1. I was curious to see what my mind was up to from moment to moment. | 0 | 1 | 2 | 3 | 4 |
| 1. I was curious about each of the thoughts and feelings that I was having. | 0 | 1 | 2 | 3 | 4 |
| 1. I was receptive to observing unpleasant thoughts and feelings without interfering with them. | 0 | 1 | 2 | 3 | 4 |
| 1. I was more invested in just watching my experiences as they arose, than in figuring out what they could mean. | 0 | 1 | 2 | 3 | 4 |
| 1. I approached each experience by trying to accept it, no matter whether it was pleasant or unpleasant. | 0 | 1 | 2 | 3 | 4 |
| 1. I remained curious about the nature of each experience as it arose. | 0 | 1 | 2 | 3 | 4 |
| 1. I was aware of my thoughts and feelings without overidentifying with them. | 0 | 1 | 2 | 3 | 4 |
| 1. I was curious about my reactions to things. | 0 | 1 | 2 | 3 | 4 |
| 1. I was curious about what I might learn about myself by just taking notice of what my attention gets drawn to. | 0 | 1 | 2 | 3 | 4 |

**Scoring**:

Key: All items were written in the positively keyed direction, so no reverse scoring of items is required.

Subscales:

Curiosity score: The following items are summed: 3, 5, 6, 10, 12, 13

Decentering score: The following items are summed: 1, 2, 4, 7, 8, 9, 11

Appendix D – The Big Five Inventory (BFI)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Disagree strongly | Disagree a little | Neither agree nor disagree | Agree a little | Agree strongly |  |
|  | 1 | 2 | 3 | 4 | 5 |  |

|  |  |
| --- | --- |
| 1. Is talkative | 1. Tends to be lazy |
| 1. Tends to find fault with others | 1. Is emotionally stable, not easily upset |
| 1. Does a thorough job | 1. Is inventive |
| 1. Is depressed, blue | 1. Has an assertive personality |
| 1. Is original, comes up with new ideas | 1. Can be cold and aloof |
| 1. Is reserved | 1. Perseveres until the task is finished |
| 1. Is helpful and unselfish with others | 1. Can be moody |
| 1. Can be somewhat careless | 1. Values artistic, aesthetic experiences |
| 1. Is relaxed, handles stress well | 1. Is sometimes shy, inhibited |
| 1. Is curious about many different things | 1. Is considerate and kind to almost everyone |
| 1. Is full of energy | 1. Does things efficiently |
| 1. Starts quarrels with others | 1. Remains calm in tense situations |
| 1. Is a reliable worker | 1. Prefers work that is routine |
| 1. Can be intense | 1. Is outgoing, sociable |
| 1. Is ingenious, a deep thinker | 1. Is sometimes rude to others |
| 1. Generates a lot of enthusiasm | 1. Makes plans and follows through with them |
| 1. Has a forgiving nature | 1. Gets nervous easily |
| 1. Tends to be disorganized | 1. Likes to reflect, play with ideas |
| 1. Worries a lot | 1. Has few artistic interests |
| 1. Has an active imagination | 1. Likes to cooperate with others |
| 1. Tends to be quiet | 1. Is easily distracted |
| 1. Is generally trusting | 1. Is sophisticated in art, music, or literature |

**Scoring**:

BFI scale scoring (“R” denotes reverse-scored items):

Extraversion: 1, 6R, 11, 16, 21R, 26, 31R, 36

Agreeableness: 2R, 7, 12R, 17, 22, 27R, 32, 37R, 42

Conscientiousness: 3, 8R, 13, 18R, 23R, 28, 33, 38, 43R

Neuroticism: 4, 9R, 14, 19, 24R, 29, 34R, 39

Openness: 5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44