

Research Information and Participants' Consent Form

Purpose: You are invited to participate in a research study entitled "*Electrophysiological markers of cognitive processes*" conducted by Dr. Kyle Mathewson of the Department of Psychology, University of Alberta. The aim of this study is to investigate electrophysiological and physiological processes of the brain and body through new technologies such as EEG and Webcam technology. Throughout the experiment we will record your brain activity while you complete a task on a computer. For some experiments we may also combine an analysis of a live video feed of your face with recording of your heart rate with an electrocardiogram (ECG) recording from your wrists, as well as other electrophysiological measurements. The study may involve: Webcam: A standard computer webcam will take a picture of your face every 20-30 milliseconds. Before the next image is taken, some algorithms are used to average the amount of each color in your face. No image of you is ever recorded or saved by the computer after the experiment is over. Electrophysiology (ECG, EOG, EMG, & EEG): ECG is the passive recording of the electrical activity of the heart from the skin. EOG is the measurement of electrical activity from the skin around the eyes. EMG is the measurement of electrical activity from the skin over muscles, and EEG is the recording of the brain's electrical activity. These techniques involve electrodes (small metal disks) placed on your body (wrists, face, head, arms) to record the electrical potential changes caused by your heart, eye, muscle, and brain activity. The experimenter will first clean a small area of skin with an alcohol pad and/or a mildly abrasive solution and then will attach a small metal electrodes with tape, a sticky paste, a head cap, or gel. These electrodes are for the sole purpose of recording your body's own electrical activity. Depending on the study, you may be asked to ride either a stationary mountain bike in the lab, or an active mountain bike outside and around the university campus. EEG data will be collected by either a computer system indoors or through a portable system outdoors.

Your participation: Experimentation will take between one and three hours including equipment set-up. In this task, you will listen to sounds and view images on a computer screen and attempt to make appropriate button responses. For this time you may also be asked to sit or stand at ease in front of a standard webcam, which will not save any images of your face after the experiment is complete, only average color information about your face will be saved. In another task, we may show you emotional images. In order to ensure anonymity, no identifying information will be on any document collected in this study (either paper or electronic) except for this consent form. At any time during the testing session, you may opt out without consequence and for any reason, with no explanation needed. After the study completion, you can withdraw your data from the study at any time up to 30 days following its completion. Thus, this form represents your informed consent for the study; however, if you consent now, your continued participation is still entirely your decision.

Your rights: Your decision to participate in this study is entirely voluntary and you may decide at any time during the testing session to withdraw from the study. If you are part of the Research Participation program and refuse to complete the study, you must complete an alternate task in order to receive your full research credit. The alternative task involves reading a scientific journal article and answering a few questions about it. This will not take any longer than the original experiment to complete. Your decision to discontinue will not affect your academic status or access to services from the University of Alberta or elsewhere. You can ask to have your data removed from the study up to 30 days following the completion of your session. Your performance will remain confidential, and your name will not appear on the response materials or be associated with your responses in any way. Consent forms will be locked in a cabinet, separate from all documents that use the same subject identifiers, for up to 5 years before being destroyed. The results of this study may be presented in entirely anonymous form at scholarly conferences or published in professional journals. Any report of the results will be presented only in the form of typical or general patterns of responses.

Benefits and risks: A direct benefit from participation is increased first-hand understanding of experimental cognitive neuroscience approaches to electrophysiology and cognition, including the debriefing following the testing session. The experiment will take less than 1 hour and 50 mins and you will receive \$10 per hour for your participation. There are no foreseeable risks to this study, but if any risks should arise, the researcher will inform the participants immediately. If you should experience any adverse effects, please contact Dr. Kyle Mathewson immediately.

Contact information: If you wish to obtain further information on the results of this experiment, please contact Dr. Kyle Mathewson (kmathews@ualberta.ca) in the Psychology Department. The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at 780-492-2615. If you have any questions about research participation, contact the Research Participation Coordinator at 780-492-5689, or rescred@ualberta.ca.

Signatures: Please sign below to indicate that you have read and understood the nature and purpose of the study. Your signature acknowledges your willingness to participate in this study.

Participant's Signature_____
Participant's Name_____
Date_____
Researcher's Signature_____
Researcher's Name_____
Date