

## PARTICIPANT INFORMATION SHEET – Psychophysics

### How does the brain influence vision?

**Researchers: Steven Dakin, Lisa Hamm, Catherine Morgan, Samuel Schwarzkopf,**  
**Students: Selassie Tagoh, Ecem Altan, Crystal Lin, Kassy Chen, Yani Ho.**

We invite you to take part in a research project investigating how you see the world. If you choose to take part in our study you will be asked to make some simple judgements about images presented on a screen, e.g. judgements about the size of objects or letters. We may ask you to visit the university on up to twelve occasions so we can spread out the testing.

**It is important you read this document carefully so that you can make an informed decision about whether you would like to participate.**

**1. Purpose of the research:** By observing your response to a variety of visual stimuli (images presented on a screen) we can measure the limits of your vision. We aim to better understand how the brain as well as the eye, limits vision.

**2. Your rights as a participant:** Participation in this study is voluntary. If you choose to participate, you can change your mind at any time without giving a reason and without any negative consequences. Whether or not you participate will not affect your relationship with the researchers. Participation or non-participation in the study will bear no penalties or loss of benefits with regard to the services provided to you by the University of Auckland Optometry Clinic. If you are a student of the researcher, your academic grades will not be affected whether you participate or not. Following participation, you have the right to request access to your data, and the right to request that your data be withdrawn from the study for up to one month after the session. You will be given a copy of this participant information sheet to keep.

**3. Procedure:** If you would like to volunteer, you will first be asked to participate in a 5-minute survey to check that you are eligible for the study. The survey includes questions about medical conditions that might affect one's ability to complete the tasks (e.g. vision problems, a history of neurological or psychiatric conditions). If you are eligible, you will be asked some demographic questions (e.g. handedness, age, etc.) and will be invited to complete an eye health check. You then may be invited to attend up to twelve psychophysics sessions described below. The scheduling of these psychophysics sessions may be within days to months of each other.

The eye health check is a comprehensive eye examination at the University of Auckland Optometry Clinic. This exam ensures that your eyes are healthy and that you have typical vision for your age. As part of this examination, you may be required to have eye drops which relax the eye muscles so that the focus of the eyes can be measured accurately. The eye drops dilate your pupils, and therefore if you intend to drive immediately after the test we will monitor you for approximately 45 minutes to make sure you are able to do so.

The eye examination will take approximately 2 hours to complete. The results from the exam will determine if you are eligible to proceed.

If after the eye check you are invited to take part, you will be asked to attend a psychophysics session to perform several visual tasks, based on what you see on a computer screen. During the task we may record where your eyes look on the screen (with specialist eye tracking equipment or a video recording). We may also make an audio recording of your verbal response to tasks (to allow us to compare verbal and key-press response times). These audio recordings will be transcribed using voice recognition software, and then edited by one of the researchers listed above. These sessions will take a maximum of 2 hours to complete.

All sessions will take place at the Faculty of Medical and Health Sciences, Park Road, Grafton, in the School of Optometry and Vision Science. Most of the vision testing will take place in the school, where you will be seated in a lab, looking at a screen.

**4. Risks and discomforts.** Because we are often interested in the *limits* of your visual performance, the task can seem repetitive, and will become increasingly difficult. However, you will be given regular breaks and the images you will be presented with will not contain stressful or emotional material.

The eye drops administered as part of the eye examination (Cyclopentolate 1.0%), cause the eye muscles to relax and, as well as pupil dilation, they cause blurry vision and sensitivity to light after instillation. If you are leaving the eye examination on foot or travelling by public transport, you will be safe to depart immediately following the test. If you are intending to drive, we will monitor your vision (for a period of up to 45 mins) following administration of the final test to ensure that you are safe to do so.

**5. Detection of Abnormalities:** In the initial screening for this study, we will organise for you to have an eye exam with an optometrist at the University of Auckland eye clinic. If the optometrist identifies abnormalities with your eyes, we will tell you, and if you wish they will offer advice, referral, or treatment as appropriate (note that new findings may make you ineligible for the study). You may be treated in the appropriate manner by the qualified optometrists present in the clinic, either directly or by referral for further examination as required. If you do not wish to know about this type of finding, please do not participate.

**6. Benefits.** There are no direct benefits to you, but your participation will contribute towards our understanding of how the brain processes what we see. As compensation for your time you will receive \$30 petrol or supermarket voucher for each session you participate in. You can also request a copy of the final published report of the study.

**7. Confidentiality and data storage** Your name will only appear on the attached Consent Form, and one electronic master file stored on password protected university drive. The consent form will be kept in a secure place at the university, and the electronic master file will be stored on a university drive that is only accessible to the named investigators. Your name will then be coded with an identification number. The identification number is used to de-identify all other data, so that your identity is kept confidential. Your data (i.e. responses and eye tracking from the computer testing) will only be referred to or labeled using this identification number and will only be shared with named researchers on this project. Video recordings of your face that may identify you will be treated with the same level of security as your other identifying information, i.e. one copy will be stored on a university password protected drive and only be accessible to the named researchers on this project. Research publications and presentations from the study will not contain any information that could personally identify you.

After completion of the study, identifying information (e.g. the consent form with your name on it) will be kept for period of 6 years, and then will be securely destroyed. De-identified data, including computer data files, will be kept for a *minimum* period of six years to allow for publication and future re-analysis. Research publications and presentations from the study will not contain any information that could personally identify you.

**8. Future research.** We would like to contact you in the future to invite you to participate in further research (it is often very useful for us to compare how vision changes over time). If you are happy for us to contact you again about further studies we would be grateful if you supply your preferred contact details on the consent form. Only researchers within the School of Optometry and Vision Science will contact you and this will be a maximum of four times a year. You may opt out of being invited to future studies at any time.

***Thank you for taking the time to read this information sheet. If you have any queries or concerns, please contact us:***

### **Researchers**

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**For any queries regarding ethical concerns you may contact:**

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**For any other concerns or complaints you may contact:**

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**APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE**  
**ON 12 March 2020 FOR 6 YEARS, REFERENCE NUMBER 024231**