Assessing binocular vision with computerised eye tracking
Participant information sheet for adults

Researchers:

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Co-investigators
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Student Researchers
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To the Participant,
You are invited to participate in this research study at the School of Optometry and Vision Science. We aim to investigate whether computer-based eye tracking tests are reliable for measuring how the two eyes move together. The computer-based eye tracker works by recording infrared video of your face and eyes, and then calculating where you are looking on the computer screen. We want to compare this to standard clinical tests, and see if we can use this technology to develop better binocular vision tests and vision training programs in the future. This is a student research project funded by a scholarship from the New Zealand Association of Optometrists.

What does the study involve?
The study will take place at the Grafton campus. The tests involved take about 1 hour to complete, and can be done in one session or divided across two sessions. We will first check the prescription of your glasses or contact lenses (if you wear any), and check if your two eyes can see well and work together. These are standard optometry tests and do not involve any eye drops or contact procedures.

After the clinical screening, we will measure your binocular eye movements using computer-based eye tracking and standard clinical tests. These tests involve asking you to look at shapes or letters on either a computer screen or a card, and these targets may be staying still or moving. You will need to wear 3D glasses for some of the tests, and you may be asked to describe what you see. Each of these eye movement tests takes 1-3 minutes, and the tests are repeated at least two times so that we can check the reliability of the results. You can take breaks as you like between the tests.

Eligibility
You are eligible to take part if you are 18 years old or over, and have good visual acuity in each eye (6/7.5 or better) and normal 3D vision. If you wear glasses or contact lenses, we will measure your vision with your lenses on. You are not eligible to take part if you have any eye disease or visual condition that stops your two eyes from working together, such as “lazy eye” (amblyopia) or an eye turn/”squint” (strabismus).

Risks and benefits
There are no long-term risks or after-effects associated with any of the tests in this study. When wearing 3D glasses during some of the tests, you may find them to be slightly uncomfortable or heavy to wear for long periods. You may also find that looking at a computer screen can make your eyes feel tired or be boring. We will offer frequent breaks if this occurs, and you can stop at any time without needing to give a reason.

While the researchers will not be conducting a full eye examination in this study, we will be using a few common optometric vision tests. It is possible that we may identify a problem with your vision that you are not aware of. If this happens, we will inform you and you will be offered appropriate treatment by the
qualified optometrists involved in the study (Dr Gao, Dr Black, or Dr Turnbull), or you will be offered a referral for further examination, professional advice, or treatment as appropriate. If you do not wish to know about incidental findings, please do not participate.

Although there are no direct benefits to you for taking part, your participation in this study will help us to better understand how to develop eye-tracking based vision tests and vision training programs in the future.

**Compensation/Koha**

To thank participants for their contribution to the research, each will receive a $20 voucher.

**Confidentiality**

Your data will be de-identified by assigning a unique code to it at the time of data-collection. Paper forms will be stored in secure locked cabinets and digital data will be stored on password-protected computers. Only the named researchers will have access to clinical, eye tracking, and video data collected as part of this study. At the end of the study we hope to present our findings at conferences or meetings, and to publish our findings in a scientific journal. These will be done in a way that does not identify you, such as by using only processed or summarised data. We will not use any images or video of you when presenting or publishing our findings.

**Your rights**

You may have a friend, family or whanau support to help you understand the risks and/or benefits of this study and any other explanation you may require. Participation will not cost you anything other than your time. If you agree to participate in this study, we will ask you to provide consent in writing on a Consent Form. Your signed Consent Form will be kept in locked storage at the School of Optometry and Vision Science for 6 years, after which the forms will be disposed of in a secure confidential waste bin.

Your participation is entirely voluntary (your choice). If you do agree to take part, you are free to withdraw from the study at any time without having to give a reason. If you are a patient at the University Optometry Clinic, whether you choose to take part or not will not affect the standard of care you receive. If you are a student at the University of Auckland, the Academic Director of the School of Optometry and Vision Science assures that whether you take part in the study or not will have no impact on your academic assessment or teaching. You also have the right to withdraw any data collected as part of this study from the time of your participation up to 6 months after data collection.

You are entitled to receive a summary of the study results when we have completed this study. This summary will not include any identifying information from anyone who took part. If you wish to receive this summary, please indicate this on the Consent Form and provide a valid email address where the results can be sent.

**Who should I contact?**

If you would like to participate in this study, please contact one of the student researchers listed at the beginning of this information sheet. If you have any further questions about the study, or have any concerns, please contact the staff members below:

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For any concerns regarding ethical issues you may contact the Chair, the University of Auckland Human Participants Ethics Committee, at the University of Auckland, Research Office, Private Bag 92019, Auckland 1142. Telephone 09 373-7599 ext. 83711. Email: ro-ethics@auckland.ac.nz

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 22 NOV 2018 FOR THREE YEARS, REFERENCE NUMBER 022340