

Vision and Hearing Testing Procedures
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Short Title	Vision and Hearing Testing Procedures
Effective Date	July 4, 2017
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Version Number	1

A. PURPOSE AND BACKGROUND

Research involving human performance assessment involves extensive study controls and screening to ensure suitable candidates for research. For example, to participate in research in the Brock University Sleep Research Lab where visual and auditory stimuli are delivered to assess information processing, participants undergo the following procedures to ensure that colour vision and hearing acuity fall within normal range. This may be applicable to other studies/research.

If a given protocol requires delivery of auditory stimuli during sleeping or wakefulness (for recording event-related brain potentials as measures of attention to auditory stimuli), then a hearing test is administered to confirm hearing is within normal ranges in both ears. Similarly, for studies that require participants to have full colour vision, researchers will administer the Ishihara vision test.

B. PROCEDURES/STUDY PROTOCOL

Are there any controlled act(s) to be performed: Yes No
 If you checked yes, list the controlled act(s) below:

Hearing test (using an audiometer):

1. Participants are presented tones of different frequencies (e.g., 500, 1000, 1500, 2000 Hz) at varying intensities (0 to 60 dB) to identify the minimum intensity at which an individual can hear each tonal type in each ear.
2. If hearing is not within normal range at the various frequencies (i.e., below 15 dB), an individual is not enrolled in the full study and is advised to have their hearing checked by an audiologist who can conduct a more thorough test.

Colour blindness test:

1. For the Ishihara Colour Test (sample below under references) participants are asked to identify coloured numbers or letters camouflaged inside circles filled with other colours. The numbers and letters are difficult to see for those with colour blindness.
2. If performance on the Ishihara Colour Test suggests participants may have deficiencies in colour vision, they will be told that they did not perform “as well

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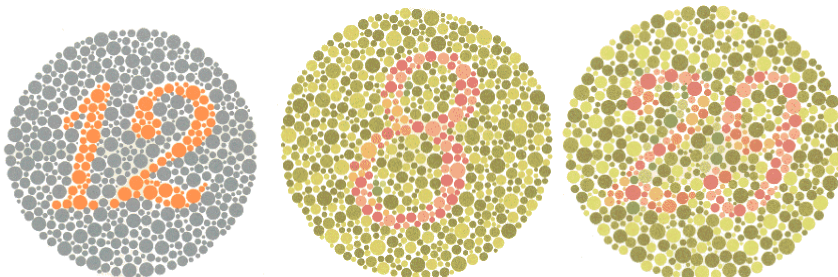
as expected” and that they are ineligible to participate as the study requires accurate colour discrimination and to seek formal examination from an eye doctor if concerned.

C. EQUIPMENT

1. Below is a picture of a typical audiometer:



2. Below are the first few pictures from the Ishihara VisionTest:



(For these plates the correct answer would be 12, 8, and 29 respectively.)

D. DESCRIPTION TO STUDY PARTICIPANTS

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1. Participants are told that after completing the consent forms, they will be asked to complete brief auditory and visual acuity tests to check hearing and colour vision.
2. For the hearing test, they will be asked to identify when they can hear audible tones that are being presented at a range of frequencies and intensities.
3. For the vision test, they are asked to identify coloured numbers and patterns within presented pictures to test colour discrimination abilities.

E. RISKS

1. There is a risk that deficits in hearing and/or colour vision that is previously unknown to the participant is discovered by the researchers.

F. SAFEGUARDS/SAFETY PROCEDURES

1. Participants will be told that they did not meet the necessary levels of hearing and/or colour vision to participate in the study. They will be reminded that the researchers are not physicians, and are not qualified to diagnose or give any further details. They will be advised to seek the help of a professional audiologist or physician if they are concerned.
2. Headphones must be cleaned with isopropyl alcohol between uses.

G. REFERENCES (if applicable)

1. Ishihara, S. The series of plates designed as a test for colour-deficiency. Kanahara Trading Co., Tokyo, Japan.
(http://www.richmondproducts.com/files/3113/1550/1433/5566_Ishihara_38_Plate_Instructions_and_score_sheet_071410.pdf)

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