Colour Vision Screener

Instructions

Introduction

The Colour Vision Screener (or CVS) test is the most recent development from the Colour Vision Laboratory at City, University of London and City Occupational Ltd. The CVS test is a downloadable program, designed to be easy to use and to screen for both red-green and yellow-blue colour vision deficiencies in **under 3 minutes**. The CVS is designed to work on a Windows computer connected to a monitor that supports the sRGB colour mode.

This document is a short instruction manual for the screener (V 2.7) that includes the system and environmental requirements, in addition to detailed instructions describing how to download, setup and run the test.

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System Requirements

Below are the recommended specifications to run the CVS test. The screener is currently only available on the Windows operating system. The recommended specifications are designed to provide a smooth user experience, and whilst the CVS program can be loaded onto a computer with lower specifications than those listed below, performance and loading times may vary.

Recommended System Requirements

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Operating system	Windows® 7 or higher (64-bit only) *
Processor	Intel Core i5 3470 @ 3.2GHZ AMD X8 FX-8350 @ 4GHZ
Memory	4 GB RAM
Storage	300MB available HDD space
Monitor	A computer monitor with full sRGB colour mode *(see Computer Monitor Settings on page 4 for more information)* †
Input	Keyboard (or numeric keypad) and mouse

* The CVS requires a 64-bit version of Windows

† The monitor used for the CVS <mark>must support and allow</mark> selection of the sRGB colour mode

Environmental Requirements

The Colour Vision Screener should be carried out in an environment that meets the following criteria.

1. The room in which you carry out the CVS should allow you to reduce the ambient light level to the 'twilight zone'.
2. The configuration of your monitor and a chair should allow you to sit ~80cm from the computer monitor with your eyes at the same height as the middle of the screener.
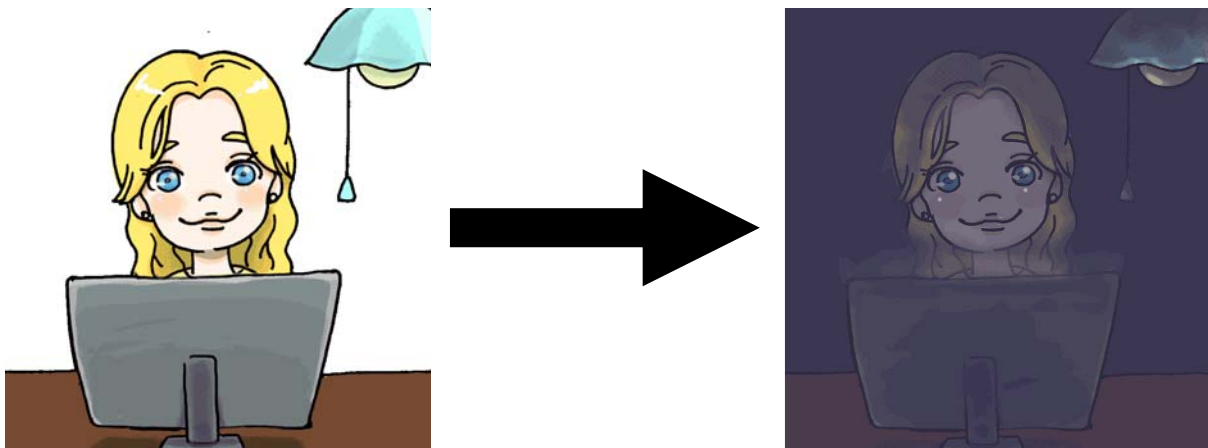
During the test indoor lighting must be turned off and you may need to use window blinds to block out any light from outside the room to achieve an ambient light level that is in the 'twilight zone'. A small desk lamp can be used whilst you are running the CVS, but this lamp should be placed away from the computer monitor to ensure that no light from the lamp illuminates the computer monitor directly (a small ~ 2W USB power lamp is often suitable).

During the CVS, you should look directly at the monitor from a distance of approximately 80cm or 31 inches. You should focus your gaze at the centre of the computer monitor, and it's recommended that you use a chair without wheels to ensure you stay in one place during the test!

Computer Monitor Settings

One of the most important prerequisites for the Colour Vision Screener is the colour 'mode' selected for the visual display. The CVS program assumes the sRGB colour mode. The latter should be selected using the **external** buttons or controls on your computer monitor before starting the CVS program.

Before undertaking the CVS, the user must select the sRGB colour mode in order to ensure that the colours displayed on your computer monitor during the CVS are as close as possible to the intended output.

Key Point: The CVS requires the sRGB colour mode to be selected on your computer monitor.

Changing the Colour Mode

The sRGB colour mode can normally be selected in the monitor settings by using the external buttons on the outside of your computer monitor. Unfortunately, the procedure for selecting the 'sRGB' colour mode varies between brands of computer monitor. A typical on-screen display menu used to select the sRGB colour mode can be seen below in Figure 1. More information about changing the colour mode for your specific computer monitor can be found on the monitor manufacturer's website.

Figure 1: Typical on-screen display settings menu used to the select the sRGB colour mode on an NEC MultiSync PA241W display). This menu (and indeed this procedure) varies from monitor to monitor.

Please select the 'sRGB' colour mode before proceeding. If the sRGB colour mode is not selected, then the errors involved in the reproduction of the desired colours will increase.

The Colour Vision Screener

Downloading the Colour Vision Screener

To download the Colour Vision Screener please access the following link:
https://www.dropbox.com/sh/orwwtokpnush2f1/AAC3vMCFMLXkYXNnH92QayO7a?dl=0

The free, single user licence allows the user to complete up to 12 tests.

If you have any issues with the URL or if you wish to obtain a full licence for the CVS test, please email colourscreener@city.ac.uk.

In addition to the CVS program, the link also allows you to download the CVS 'Show'. The latter provides useful user instructions and last for 4 minutes. We recommend you watch this movie to find out what is involved. You may also watch the CVS 'Show' using the following link: https://www.youtube.com/watch?v=QQamlgwwCmk&feature=youtu.be

Running the Colour Vision Screener

The Colour Vision Screener is simple and easy to use. The program has three 'stages':
1. Setup, introduction and instructions
2. Entering your details
3. Completing the test

When starting the CVS read through the on-screen instructions and enter the user's details. The on-screen instructions are a simplified version of the instructions contained in this document and the data entered are only used to determine the bespoke parameters used in the CVS. These data are **not** used for any other purpose. The data will not leave your computer, but it is important that you fill out this form accurately (in particular it's crucial that the age of the user is entered correctly) since this determines the colours used by the screener test.

You will then be presented with examples of the stimulus used during the test, followed by a short learning mode to ensure that the user is happy with the procedure used during the test. During the learning mode one should fixate in the middle of the screen and press the appropriate button after the beep. Once the learning mode has been completed you can move on to the full test. You have the option to repeat the learning mode if you wish, until you are comfortable with the procedure used during the test.

Once happy with the learning mode, one can move on to the full CVS test. The full test is more challenging than the learning mode and your CVS results will be displayed following

the completion of the test. The test allows you to save your results as a pdf file. You must do so before you close the program. Should you wish to do so, you can also copy and paste the CVS test results window.

Interpreting the Colour Vision Screener Results

Please see the 'Colour Vision Screener Results Interpretation' document for more information. This separate downloadable document contains a step-by-step guide to interpreting and understanding your CVS results and their significance.

CAD Centres Participating in the Colour Vision Screener Multicentre Study

We would like to acknowledge the CAD centres, located around the world, who are taking part in the Colour Vision Screener multicentre study.

In alphabetical order:

1. **Aeromedical Centre Germany** - Stuttgart, Germany
   - Dr Sabine Roelcke
   - Email: service@aeromedical-center.info

2. **Centreline Aviation** – London, UK
   - Contact: Dr Chris King
   - Email: Initial@amsgatwick.com

3. **Deakin University** - Melbourne, Australia
   - Contact: Dr Amanda Douglass
   - Email: amanda.douglass@deakin.edu.au

4. **Dr Vio & Partners** - Hong Kong
   - Contact: Dr Steven Ho
   - Email: drstevenho@gmail.com

5. **Livingstone Clinics** - Melbourne, Australia
   - Contact: Dr Elizabeth Livingstone
   - Email: drlizlivingstone@gmail.com

6. **Naval Refractive Surgery Center** - California, United States
   - Contact: Dr Vilhelm Koefoed
   - Email: vkoefoed@icloud.com; Vilhelm.Koefoed@uib.no

7. **Russian Academy of Sciences** - Kharkevich Institute-Russian Academy of Science, Moscow, Russia
   - Contact: Professor Galina Rozhkova
   - Email: gir@iitp.ru

8. **Sanjeevan Clinic** – Mumbai, India
   - Contact: Dr Rohan Goyal
   - Email: rohankgoyal@gmail.com

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CITY
UNIVERSITY OF LONDON
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Colour Vision Research Laboratory,
City, University of London