

# Colour Vision Screener

## Colour Vision Screener Results

### Introduction

This document is a short guide aimed to help you understand your Colour Vision Screener (CVS) test results for the Colour Vision Screener (V 2.7). General information about the Colour Vision Screener can be found in the downloadable 'Colour Vision Screener Instructions' document.

The Colour Vision Screener aims to rapidly screen for normal red/green and yellow/blue colour vision. In doing so the Colour Vision Screener is designed to **only** answer the following questions:

1. 'Does the user have normal red/green colour vision?'
2. 'Does the user have normal yellow/blue colour vision?'

The Colour Vision Screener does not measure the severity of any potential colour vision deficiency or attempt to classify the type of any colour vision deficiency (beyond separating red/green and yellow/blue colour vision deficiencies). To measure the severity of a colour vision deficiency one needs to complete the full CAD test.

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## Interpreting the Colour Vision Screener results

	Diagnosis	Percentage Correct	Confidence Rating
<b>Red / Green Colour Vision</b>	Normal	100%	High
<b>Yellow / Blue Colour Vision</b>	Normal	98%	High
<b>Response Reliability</b>	Excellent	100%	-

*Figure 1. Colour Vision Screener results obtained by a normal trichromat (an individual with normal red/green and normal yellow/blue colour vision)*

The Colour Vision Screener results can be broken down into several key components.

1. Red/green results
2. Yellow/blue results
3. The participant's response reliability

The red/green and yellow/blue results contain a diagnosis, the percentage of stimuli that were correctly identified and a confidence rating. The diagnosis made by the Colour Vision Screener can range from 'Normal' to 'Congenital/Acquired Colour Vision Likely'. A 'Normal' diagnosis indicates normal red/green or yellow/blue colour vision whereas a diagnosis of 'Congenital Colour Vision Deficiency Likely' indicates that the results obtained are consistent with the participant having a congenital colour vision deficiency. The confidence rating quantifies how confident the Colour Vision Screener is in the diagnosis made and ranges from 'High' to 'Poor'.

More information about the confidence rating in the CVS can be found in the following article: <https://onlinelibrary.wiley.com/doi/abs/10.1002/col.22599>

The participant's response reliability is broken up into a diagnosis and a percentage correct value. The participant's response reliability measures how attentive the participant was during the Colour Vision Screener.

There are three key points that can be concluded from the results shown in Figure 1.

1. The results of the Colour Vision Screener indicate that this individual has **normal red/green colour vision**.
2. The results of the Colour Vision Screener indicate that this individual has **normal yellow/blue colour vision**.
3. The individual's response reliability was excellent, suggesting that they were attentive during the test and this combined with the high confidence rating for their red/ and yellow/blue results suggests that their Colour Vision Screener results are an accurate representation of their colour vision.

The Colour Vision Screener allows the user to save the results in pdf format. A screenshot showing the results obtained by an individual with normal trichromatic colour vision is shown in Figure 2.

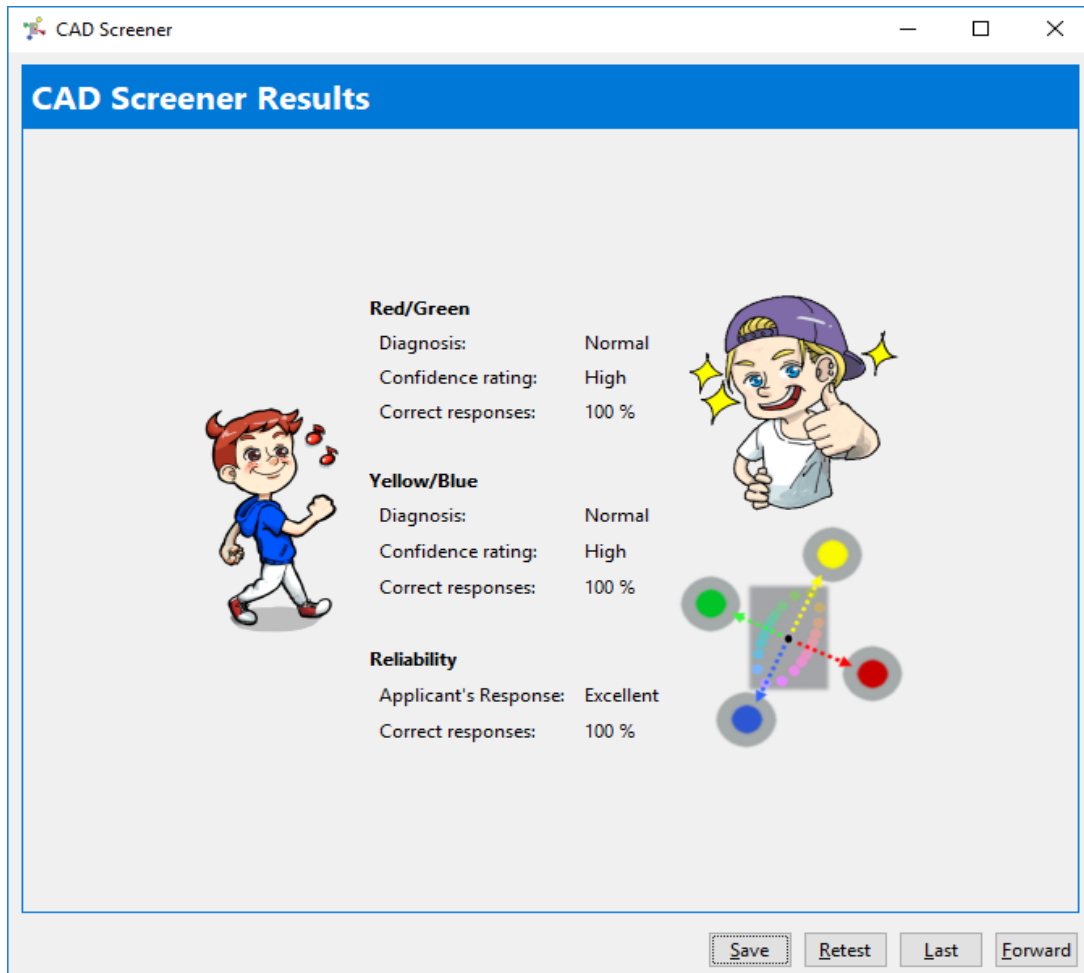


Figure 2: A screenshot showing the Colour Vision Screener results for an individual with normal trichromatic colour vision

## Example Colour Vision Screener Results

### Congenital Dichromacy (Protanopia)

	Diagnosis	Percentage Correct	Confidence Rating
<b>Red / Green Colour Vision</b>	Red/green congenital deficiency	52%	High
<b>Yellow / Blue Colour Vision</b>	Normal	100%	High
<b>Response Reliability</b>	Excellent	100%	-

*Figure 3: Colour Vision Screener results from a protanope (an individual with a congenital red/green colour vision deficiency and normal yellow/blue colour vision)*

There are three key points that can be concluded from the results shown in Figure 3.

1. The results of the Colour Vision Screener indicate that this individual has a **red/green colour vision deficiency**.
2. The results of the Colour Vision Screener also indicate that this individual has **normal yellow/blue colour vision**.
3. The individual's response reliability was excellent, suggesting that they were attentive during the test.

### Acquired Colour Vision Deficiency

	Diagnosis	Percentage Correct	Confidence Rating
<b>Red / Green Colour Vision</b>	Normal	95%	High
<b>Yellow / Blue Colour Vision</b>	Acquired yellow/blue deficiency likely	62%	Good
<b>Response Reliability</b>	Excellent	100%	-

*Figure 4: Colour Vision Screener results from an individual with acquired colour vision deficiency*

Key points that can be concluded from the results shown in Figure 4.

1. The results of the Colour Vision Screener indicate that this individual has **normal red/green colour vision**.
2. The results of the Colour Vision Screener indicate that this individual has **an acquired colour vision deficiency**.
3. The individual's response reliability was excellent, suggesting that they were attentive during the test.

## Other Cases

	Diagnosis	Percentage Correct	Confidence Rating
Red / Green Colour Vision	Normal	82%	Adequate
Yellow / Blue Colour Vision	Normal	82%	Adequate
Response Reliability	Unusable	50%	-

*Figure 5: Colour Vision Screener results from an individual who was inattentive during the test*

There is only one conclusion that can be made from the results shown in Figure 5.

- **The individual's response reliability was 'unusable'** indicating that, due to the individual's inability to identify the demonstration stimuli their results are unreliable and **cannot** be used to identify if they have any form of colour vision deficiency.

## Frequently Asked Questions

**Question:** I completed the Colour Vision Screener and got 100% correct for all of the results, does this mean that I have normal colour vision?

**Answer:**

Provided the Colour Vision Screener was carried out correctly, these results indicate that you have normal trichromatic colour vision (normal red/green and normal yellow/blue colour vision).

**Question:** I completed the Colour Vision Screener and got 50% correct for red/green colours but 100% correct for yellow/blue colours. Does this mean that I am colour blind?

**Answer:**

Provided the Colour Vision Screener was carried out correctly, these results suggest that your yellow/blue colour vision is within the normal limits for your age and that you have a form of red/green colour vision deficiency (likely congenital in nature). To learn more about the type and severity of loss you can complete additional colour vision testing (either by completing a full CAD test or by any other means).

**Question:** My response reliability is poor, and I only got 80% correct for the red/green and yellow/blue colours, what do these results suggest?

**Answer:**

Provided the Colour Vision Screener was carried out correctly, these results suggest that you have normal trichromatic colour vision (normal red/green and normal yellow/blue colour vision), but they also indicate that your response reliability was poor. To confirm the Colour Vision Screener results you could repeat the Colour Vision Screener and if you obtain the same results, you should complete the full CAD test.

**Question:** Do I need to complete further testing?

**Simple answer:**

No, any further testing is completely optional.

**Detailed answer:**

Any further testing is completely optional. The 'next step' will depend upon the outcome of the Colour Vision Screener (assuming that the Colour Vision Screener has been carried out correctly):

Outcome 1: Both the red/green and yellow/blue components of the CVS were passed

You have normal red/green and yellow/blue colour vision and no further testing is needed.

Outcome 2: The CVS detected either congenital or acquired colour vision deficiency

If you wish to learn more about the type and severity of your colour vision deficiency, then you should carry out the CAD test. This would be particularly important if you wish to work in occupational environments which allow for certain degrees of colour vision deficiency.

There are numerous CAD testing centres located around the world. A list of CAD testing centres that took part in the multicentre Colour Vision Screener study can be found at the end of this document (page 8).

## 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.

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