

# Colour vision

## Questions

### What is colour vision deficiency?

Colour vision deficiency is a two-fold complaint. A person suffering from a colour vision complaint:

- > Will confuse some colours
- > Will not see some colours as brightly as people with normal colour vision

It is very rare for a person to be unable to distinguish between any colours and therefore the term colour-blind is misleading.

### How can I tell if I am colour vision deficient?

Your optometrist has simple tests that will reveal any colour vision problem you may have.

### Why is colour vision important?

Colour is used constantly as a means of communicating information.

Children in their early grades at school are taught through the use of colour and their learning can be hampered by not being able to see colours properly. It is important for your child's colour vision to be checked before he or she enters school. Once you know that your child is colour vision deficient, you will be able to minimise any learning difficulties that your child may have.

People in many occupations – such as pilots, electricians and painters – must be able to discriminate accurately between colours. Students who know they are colour vision deficient can avoid choosing and studying for careers that require fine colour discrimination.

Traffic lights and other warning signals may not be seen by people who have a colour vision deficiency.



### How common are colour vision deficiencies?

Males are far more likely to have colour vision deficiencies than females. One in 12 men has a colour vision problem, while only one in 200 women is affected.

Being unable to distinguish between shades of red and green is the most common colour vision deficiency.

### What causes colour vision deficiencies?

Nearly all colour vision deficiencies are inherited. When the deficiency is hereditary it will remain the same throughout life and does not lead to vision loss or blindness.

In some unusual cases people develop colour vision deficiencies through the ageing process, disease or injury.

Every colour corresponds to a unique wavelength of light in much the same way as every radio station has its own wavelength on which it broadcasts radio signals.

There are receptor cells in the retina at the back of the eye. These cells contain a light-sensitive pigment called a photopigment. A 'red' photopigment responds most strongly to orange and red colours, a 'blue' photopigment responds best to violets and blues, and a 'green' photopigment responds best to greens and yellows.

In people with colour vision deficiency, some of the receptor cells in the retina respond to the wrong wavelengths.

### Can colour vision deficiencies be cured?

No. Colour vision deficiencies cannot be cured or prevented but people with colour vision deficiencies learn to compensate for their problem in various ways. Often people will be unaware that they do not see colours properly because they have found ways of overcoming the difficulties.

**Regular eye examinations are the best way to ensure good vision for life.**

## Your optometrist