

Secondary School Pupils with CVD can have difficulties across the curriculum. Examples of this are:-

- recognising colour change in practical Science activities
- reading maps, graphs, pie-charts that are not labelled or demarked using pattern rather than colour
- sports hall court markings in different colours
- pupils with CVD using limited colour palettes in their Artwork, Powerpoint Presentations and in the general presentation of work
- pupils with CVD need informed advice regarding careers that may be difficult for them to access e.g. pilot, electrician

Please Note The NHS recommends that children should have their vision tested every two years. This test is free for all children under the age of 16. However, the NHS eye test for children DOES NOT routinely include a Colour Vision Deficiency test. This means that there are a large number of children and young people with undiagnosed CVD in schools!

Please encourage parents and guardians to take their children for a regular eye test. Encourage them to ask for a CVD test as part of that assessment, particularly if it has been noticed the child has difficulty with colour.

Northumberland

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Colour Vision Deficiency

**The Visual Impairment Team
does not routinely support children
with Colour Vision Deficiency.**

What is colour vision deficiency?

Colour vision deficiency (CVD) is usually an inherited condition, which affects the way a person perceives colour. However, it can sometimes develop as a consequence of a pre-existing health condition or as a side effect of a medicine. It is caused by the lack of pigment in the cells at the back of the eye which translate colour messages. It affects 1 in 12 males and 1 in 200 females. There is no cure but it remains stable throughout life.



Normal Protanopia Deuteranopia Tritanopia

Types of colour vision deficiency

There are 3 main types of genetic CVD conditions as illustrated in the diagrams above:

- protanopia/protanomaly relates to a red deficiency
- deuteranopia/deutanomaly relates to a green deficiency
- tritanopia/tritanomaly relates to a blue deficiency

The degree of deficiency can range from a mild, near normal appreciation of colour to a less common, more severe confusion. Complete colour deficiency is called *Monochromacy* and is extremely rare.

How does colour deficiency affect a child?

1. some children are not aware that they are CVD and may become upset when they do not understand why they cannot do something
2. children may be slower to follow instructions which relate to colour
3. when colours are used as an aid to learning they may not understand some of what is being presented
4. artificial light alters colour discrimination and so when working in those conditions, a child may experience greater difficulty than in good natural light
5. certain occupations require specific standards of colour vision

CVD is not in itself a special educational need, but there may be some needs arising from it. Schools can consider the following recommendations to minimize the impact.

Supporting a child with Colour Vision Deficiency

- parents/guardians should be encouraged to have their children's vision tested regularly and a test for Colour Vision Deficiency should be part of this
- ensure that all staff are aware if a child has a colour deficiency
- adapt teaching methods so that colour-blind children are included
- ensure good lighting (natural light being better). Keep children out of bright sunlight and be aware that artificial light can distort perception of colour
- encourage the child to ask if unsure of colour discrimination
- clearly label coloured pencils, felt tipped pens, paints in a palette, colours in books, colour banded books in book schemes and worksheets etc. When painting, colours should always be placed in the same section of the colour palette and labelled
- teach the correct colours for everyday objects e.g. blue for sky, green for grass, red for Santa's suit etc.
- teach safety aspects related to colour e.g. traffic light sequences
- where possible use the colour-blind setting on computer software and games
- avoid books and support materials, which use colour on colour (colour on colour). Black on white is often best
- when presenting learning materials to children on the whiteboard or on displays, use strong contrast on white rather than red, green or pastel colours
- use symbols as well as/rather than colours when levelling reading books
- encourage a child who is CVD to work with a 'buddy' to support with colour naming
- use a self-assessment programme that does not use colours
- in PE, ensure that the child understands who their teammates are if coloured bibs are being used in team games and the colour of balls
- ensure that any child with colour vision deficiency is not teased about their condition