

EYE HEALTHCARE

COLOUR VISION DEFECTS

The ability to perceive colour adds an extra dimension to the way we see the world. The process of colour perception starts with the absorption of light by small cells known as “Cones” which form part of the retina at the back of the eye. The retina contains some cone cells that respond best to short (blue), medium (green) and long (red) wavelengths of light, and it’s the relative amount of activation of each of these three types that in turn relays that particular colour code to the brain.

Approx 7-8% of males and 0.5% of females show some form of colour vision defect. Telling the difference between red and green is the most common defect and will always be exclusively in males since it is carried on their genetic chromosome.

Very occasionally people are born with only one (monochromats) or two (dichromats) types of cone but by far

the most common type of defect is where the individual is born with all three cone types but one is partially defective (anomalous trichromat). This shows that most affected individuals are only “colour deficient” and not “colour blind” as the harsh term suggests.

Your optometrist can easily check for deficiencies using the ‘Ishihara’ (for red-green), ‘City’ (blue-yellow) or ‘D15’ tests, particularly when there are vocational needs eg. electrical apprentices, pilots, railway employees etc. Although there is no cure for colour deficiency, thankfully it doesn’t get worse as life progresses.

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