



Colour Vision Deficiency and Specialty Tinted Lenses

The Policy Issue

Colour vision deficiency is characterized by the inability to discriminate between colours or shades of colours. There are a number of different factors that can cause this. Most commonly this is congenital and due to an x-linked inherited genetic disorder for which there is no treatment. Other possible causes are usually acquired and include diseases of the eye or the visual pathway, certain medications, aging, or chemical toxicity. If the colour vision deficiency is acquired, treatment may be possible.

Specially tinted lenses, (a coloured filter over eyeglasses or a coloured contact lens worn on one eye or both eyes), can improve some people's ability to differentiate between colours by altering either the brightness contrast or colour contrast so that the colours appear different. The use of coloured lenses does not increase the shades of colour perceived by an individual, they only help individuals distinguish between certain colours by introducing contrast artifacts. Such lenses cannot make a person with genetic colour deficiency see the colour in a true chromatic manner.

"Colour blindness" is called achromatopsia, which is a lack of any colour perception and is quite rare.

Clinical Evidence

The use of tinted lenses may enhance subjective colour discrimination and assist in certain colour-related tasks, but are not indicated as an aid for colour discrimination in occupations with colour vision-related restrictions. Individual results seen with these lenses will vary depending on the type and extent of the colour vision deficiency of the individual.

Policy Position

It is a policy of the Canadian Association of Optometrists that anyone having problems discerning shades of colour should have an eye health examination, including a review of medications and physical health conditions. If the cause of their colour vision deficit is determined to be from an inherited disorder, the optometrist can provide counseling regarding the effects of poor colour discrimination on occupations and daily life. If the colour vision deficit is determined to be acquired from medication or disease, an appropriate course of treatment should be undertaken.

The use of specially tinted lenses to pass a colour vision test for occupational reasons is not endorsed by the Canadian Association of Optometrists; these tests are usually required in occupations where public safety is at risk and wearing tinted lenses may invalidate the accuracy of the results.

-Reviewed: October 26, 2018