Color Blindness

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Overview

- Color Blindness or called color vision deficiency (CVD) is a visual impairment that makes it difficult to differentiate between particular colors.
- The issues are varying in severity.
- Since color blind people are not blind, the term "color blindness" is misleading.
- Rather, they will see colors in a restricted range of colors; Only a few may be able to see colors at all.
- Types of Colorblindness
  - Red-Green: Deuteranomaly, Protanomaly, Protanopia, Deuteranopia
  - Yellow-Blue: Tritanomaly, Tritanopia
  - Total: Achromatopsia
Demographics

- Generally passed on hereditarily and is more normal in men than in ladies.
- Red-green colorblindness inherited in approximately 8% of men and 0.6% of women.
- Males and females equally suffer from blue-yellow color vision defects
- This condition happens in less than one of every 10,000 individuals around the world.
- Complete achromatopsia influences an expected one of every 30,000 individuals
- Mutations in the CNGA3, CNGB3, GNAT2, OPN1LW, OPN1MW, and OPN1SW qualities are known to cause variety vision defects. Hereditary changes with OPN1LW and OPN1MW will be lead to a shortfall of L or M cones or the creation of abnormalities cones that influence red-green color blindness.

- Mutations of the OPN1SW quality prompts the untimely annihilation of S cones or the development of damaged cones which makes it challenging to identify contrasts between shades of blue and green.

- Concerning the CNGA3, CNGB3, and GNAT2 qualities, their change is liable for achromatopsia.
Causes

- Conditions which could cause CVD: Alzheimer disease, diabetes mellitus, glaucoma, leukemia, liver disease, chronic alcoholism, macular degeneration, multiple sclerosis, Parkinson disease, sickle cell anemia, and retinitis pigmentosa.
- Accidents or strokes that harm the retina or influence specific region of the brain can prompt visual impairment.
- Medications may cause CVD: antibiotics, barbiturates, anti-tuberculosis drugs, high blood pressure medications, and several medications for nervous system disorders and mental health issues.
Diagnosis

- There are multiple tests accessible to distinguish issues related with color vision.
- The most common tests is the American Optical/Hardy-Rand-Ritter Pseudoisochromatic test.
- It is made out of a few circles loaded up with hued dots of various sizes and tones.
- An individual with normal color vision looking at a test circle sees a number or shape that is found in the focal point of a circle of differently shaded spots. But, a CVD individual can’t recognize the number.
Treatments

- There is no treatment or remedy for color vision deficiency.
- Most people with condition live well even with disability and normally depend on variety signals and subtleties that are not intentionally clear to people with regular variety vision.
- As of late, several eyeglasses have been created for individuals with color blindness. Instances of these glasses are EnChroma and Color Correction System. Although, there is not much research on the effectiveness of these glasses.
Thank You

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