

63 – Feb – MyVision – Color Blind Testing: Types of Tests and Where to Take Them

Meta description: Eye doctors have a variety of exams to test for color blindness, including color plate, hue and anomaloscope tests.

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Online tests now make it possible to screen for color blindness from the comfort of your home. But any finding of a color vision deficiency needs to be confirmed by other tests such as Ishihara color plate, anomalscopy and other tests in a doctor's office.

In most cases, color blindness is a hereditary disorder, one that runs in the family. Therefore, if your first-degree relative has color vision deficiency, you are more likely to develop the condition.

Human eyes usually contain unique cells known as rods and cones that enable us to see. Rods detect light, while cones are responsible for color perception.

Three types of cones — red, green and blue — allow you to differentiate between colors. Any abnormality of the cones, including the absence of a single or more types, leads to color vision deficiency.

Various color-blindness tests enable doctors to learn if cones are functioning properly and, if not, which ones are defective.

Red-green color blindness that results from red or green cones abnormalities is the commonest type of color perception disorder. Other variants of color blindness include blue-yellow and total blindness.

There is no cure for color blindness, but special lenses can alleviate the symptoms and help you live a normal life.

What is a Color Blind Test?

When you think it likely that you have color blindness because of a family history or have difficulty recognizing some colors, your doctor will perform a color vision test to confirm the diagnosis. A [color blind test](#) involves reading special characters formed by multi-colored dots on specific backgrounds.

People with color vision deficiency often struggle to see letters or numbers formed by these dots. If you have total color blindness, you might not see anything in the test charts and plates.

Screening Tests for Color Blindness

Color blindness can be detected by various methods, including [color plate, hue, and anomaloscope tests](#).

Color Plate Test

There are multiple types of pseudoisochromatic color plate test, with Ishihara charts being the most typical variant. The color plate tests require you to identify letters, shapes, or numbers made of dots

featuring a specific color on a multi-colored background. If you have an abnormality of the cones, you might not identify the pattern at the center of the plate.

Besides the Ishihara test, color plate variants include Dvorine, American Optical Hardy-Rand-Rittler, Tokyo Medical College, and City University Test. These screens check for different types of color blindness. For example, the Ishihara test checks for only red-green blindness while the Hardy-Rand-Rittler can identify blue-yellow and red-green color vision problems.

Arrangement Tests

Also known as hue tests, the arrangement test requires you to arrange blocks of different colors in a particular order. The design of the tests makes them suitable for evaluating various aspects of color vision, including fine hue discrimination, neutral zones, saturation discrimination, and color confusion.

If your work requires excellent color vision, arrangement tests are the best option for screening and diagnosing color deficiency.

While these tests are more objective, they are not suitable for the pediatric population, as they require patience, abstract ordering, and dexterity.

Anomaloscope test

Anomaloscope is an optical instrument with two different colored fields and control knobs. Your doctor will ask you to look into the anomaloscope and match lights in the two fields to have the same color and brightness. You will use the knobs to manipulate the colors.

Anomaloscope is the standard test for diagnosing color blindness. When performed together with other tests, your doctor can accurately use the assessment to categorize your color vision deficiency.

Online Color Blindness Tests

Online vision tests offer a quick self-assessment for color vision. Most online tests are a replica of the traditional [pseudoisochromatic plate tests like Ishihara](#), with reliable outcomes in most cases.^[4] Notably, factors such as blue light filters and the type of device can affect the outcome of online color vision tests.

If you want to screen for color blindness from the comfort of your home or office, you can try [Enchroma color blind test](#) and [Prokerala vision test](#).

Who Should Take a Color Blind Test?

Color blindness is primarily an inherited vision disorder with a male preponderance. Every one in ten males has a color deficiency, while only one in two hundred females will have the condition. Therefore, males, especially of Northern European descent, should take color blindness tests early.

If color deficiency runs in your family, screening for the disorder early enough, regardless of gender, is essential.

Acquired color vision deficiency can occur in individuals with any of the following local and systemic conditions:

- Diabetes
- Sickle cell disease
- Parkinsonism
- Leukemia
- Glaucoma
- Macular degeneration

Alcoholism and some drugs like hydroxychloroquine also increase the risk of developing color blindness. Screening for color vision deficiency is vital if you have any of the mentioned conditions.

What is a Good Age to First Test for Color Blindness?

Since most color blindness is mainly an [inherited vision disorder](#), testing should begin early. Research shows that taking your child for color deficiency screening at age four, followed by appropriate treatment, is essential for optimal school performance.

FAQs

How do you test if you are colorblind?

You can screen for color blindness using online tests such as Enchroma, but you need to see an ophthalmologist or optometrist if the screening test is positive.

What is the most accurate color blind test?

An anomaloscope test is very accurate in diagnosing color blindness, but you may need to supplement its results with information from other tests to categorize the disorder accurately.

References

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