

# Problems Unseen



**Making fields and facilities more welcoming for colorblind athletes**

**By Mary Helen Sprecher**

**S**ometimes, not everything is black and white. There are plenty of shades of gray between.

And in sports, that can cause a problem. Colorblindness (also known as color vision deficiency and CVD) among youth athletes is not uncommon; in fact, according to UK-based organization Colour Blind Awareness (CBA), approximately one in 12 males and one in 200 females are colorblind. In the U.S., 13 million people have the condition.

Let that sink in for a minute: nearly 10 percent of all men have colorblindness. That means on each boys' (or men's) sports team that plays in a park, odds are at least one person is colorblind.

In other words, it is not only possible but probable that parks, camps, and other venues designed to accommodate recreational play have already hosted (maybe without knowing) athletes with colorblindness. This reality begs the question: how well do leaders understand it, and what are organizations doing to make sports facilities more accommodating for players with colorblindness?

Multiple problems face these athletes, including an almost universal misunderstanding of what colorblindness is. While many think of it as an inability to see any color (quite literally viewing the world in shades of black and white, like an old movie), there are different types.

On its website, the National Eye Institute (a part of the National Institutes of Health) identifies several types of CVD, some more severe than others:



## Red-Green Color Vision Deficiency

As the name suggests, this makes it difficult to tell the difference between red and green. There are four types of red-green color vision deficiency:

- **Deuteranomaly** is the most common version. It makes certain shades of green look redder. This type is mild and doesn't usually get in the way of normal activities.
- **Protanomaly** makes certain shades of red look greener and less bright. This type is also mild and doesn't usually inhibit everyday activities.
- With both **Protanopia** and **Deuteranopia**, affected people are unable to tell the difference between red and green.

## Blue-Yellow Color Vision Deficiency

This less common type of CVD makes it difficult to tell the difference between several different color combinations. There are two main types:





- **Tritanomaly** makes it hard to discern the difference between blue and green and also yellow and red.
- **Tritanopia** limits an individual's ability to tell the difference between blue and green, purple and red, and yellow and pink. It also makes colors look less bright.

### **Complete-Color Vision Deficiency**

People with this rare type of colorblindness cannot discern colors at all. This is also called **monochromacy** or **achromatopsia**.

One of the problems with colorblindness is it can go undiagnosed since it does not prevent children from learning to read or write. Fortunately, there are now multiple online vision tests that anyone can take free of charge, although the final diagnosis should always be made by an optometrist. Also important to note, even if someone is diagnosed with a variation of colorblindness, the condition is not considered a handicap under the Americans with Disabilities Act.

### **Problems For Athletes With Colorblindness**

A chief concern for colorblind athletes is that many fields and courts are lined for multiple sports. A field may be lined for soccer, football, lacrosse, field hockey, and others, while a hard court may have playing lines for tennis and pickleball, and possibly other sports.

That means, for example, that a dark-green court might have tennis lines in white, but pickleball lines in dark red, and/or tennis lines in dark blue for 30-foot and 60-foot play. The red or blue lines may not be visible, or easily recognizable, to a player with colorblindness. Athletes who cannot discern specific colors can also have a difficult time playing on a sports field with multi-colored lines.

Additionally, Colour Blind Awareness notes on its website that young athletes may be self-conscious if they have difficulty telling uniform colors apart. The worry about being different from, or somehow not as skilled as, other players can cause a child to hide colorblindness.

However, youth sports are starting to tackle the problem. Guidance from USA Lacrosse states, "Ball colors at the high school and youth level can be white, yellow, lime-green, or orange for the boys' game and yellow, lime-green, or orange for the



girls’ game. Lime-green was added on the advice around colorblindness for both games. Additionally, there is no restriction on the color of the lines on the fields as long as they are contrasting.”

Some field managers have begun delineating play areas by using small plastic cones; this could be an option when hosting athletes who might not see the playing lines as clearly.

The invention of “colorblind glasses” has received a great deal of press, particularly on social media. However, these glasses do not correct or cure colorblindness—no matter what TikTok content creators like to claim in their videos. Such glasses can make it easier for people with some forms of colorblindness to tell colors apart; however, they may not work in all cases.

What is key in all cases is awareness. An audit of facilities, to see if potential problems exist, may be helpful as well. And as the time comes to resurface courts or reline fields, the websites of various governing bodies and other colorblindness resources may help facilities provide fields and courts that are more welcoming to all players.

*The American Sports Builders Association publishes several books that are useful to park officials who are working on sports facilities. These publications cover sports fields, tennis courts, pickleball courts, and running tracks, as well as courts and recreational surfaces, and are written in a user-friendly format. Information is available through ASBA’s website at [www.sportsbuilders.org](http://www.sportsbuilders.org). PRB+*

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