

UNDERSTANDING COLOR BLINDNESS

A Guide for Parents and Educators

What is Color Blindness?

Color blindness (also called color vision deficiency) means a person sees colors differently than most people. It is usually genetic and is much more common in boys than girls. People with color blindness can still see clearly—they just have difficulty distinguishing between certain colors.

THE THREE MAIN TYPES OF COLOR BLINDNESS

1. RED-GREEN COLOR BLINDNESS

This is the most common type. People with this condition have trouble telling the difference between reds and greens.

Subtype	What Happens	How Common
Protanopia	Cannot tell the difference between red and green at all. Reds may look dark or brownish.	Affects about 1% of males
Deuteranopia	Cannot tell the difference between red and green at all. Greens may look beige or pinkish.	Affects about 1% of males

Subtype	What Happens	How Common
Protanomaly	Milder form. Reds look more like greens and appear less bright.	Affects about 1% of males
Deuteranomaly	Milder form. Greens look more like reds. This is the most common form of color blindness.	Affects about 5% of males

What colors are difficult to distinguish?

- Red and green
- Red and brown
- Green and orange
- Green and yellow

2. BLUE-YELLOW COLOR BLINDNESS

This is less common than red-green color blindness. People have trouble telling the difference between blues and greens, and between yellows and reds.

Subtype	What Happens	How Common
Tritanopia	Cannot tell the difference between blue and green, yellow and pink, or purple and red. Blues may look greenish.	Very rare (affects less than 0.01% of people)
Tritanomaly	Milder form. Makes it hard to tell the difference between blue and green, and between yellow and red. Colors appear less vibrant.	Extremely rare

What colors are difficult to distinguish?

- Blue and green
- Yellow and pink
- Purple and red
- Blue and purple

3. COMPLETE COLOR BLINDNESS

This is very rare. A person cannot see any color at all and sees only shades of gray, black, and white.

Subtype	What Happens	How Common
Monochromacy	Cannot see any colors. Vision may also be blurry and sensitive to bright light.	Extremely rare (about 1 in 30,000 people)

What colors are difficult to distinguish?

- All colors appear as shades of gray

QUICK REFERENCE TABLE

Type	Difficulty Seeing	Common In
Protanopia	Red vs. Green	Males (1%)
Deuteranopia	Red vs. Green	Males (1%)
Protanomaly	Reds look greenish	Males (1%)
Deuteranomaly	Greens look reddish	Males (5%)
Tritanopia/Tritanomaly	Blue vs. Green, Yellow vs. Pink	Extremely rare
Monochromacy	All colors (sees only gray)	Very rare

IMPORTANT TO REMEMBER

- There is currently **no cure** for color blindness that is present from birth.
- Special glasses may help **some** individuals tell the difference between certain colors, but they do **not** provide normal color vision.
- Color blindness does not mean a child cannot learn—it simply means they need **different color cues** and learning tools.
- **Multiply-Easy Color Coded Learning Gloves** are designed with these color deficiencies in mind to help all children learn regardless of their color vision type.