



Color Blindness

If your clothes don't match, someone might have teased you about being color-blind. But some people really are color-blind. It doesn't mean they can't see any color at all, like a black and white movie. It means that they have trouble seeing the difference between certain colors.

Being color-blind can make it tricky to match your shirt and pants, but it's not a serious problem. People who are color-blind can do normal stuff, even drive. Most color-blind people can't tell the difference between red or green, but they can learn to respond to the way the traffic signal lights up. The red light is generally on top and green is on the bottom.

Cones and Color

To understand what causes color blindness, you need to know about the cones in your eyes. Cones in your eyes? Yes, but they're very small. These cones are cells on your retina, an area the size of a postage stamp that's at the back of your eye. You have "red," "blue," and "green" cones, which are sensitive to those colors and combinations of them. You need all three types to see colors properly. When your cones don't work properly, or you don't have the right combination, your brain doesn't get the right message about which colors you're seeing. To someone who's color-blind, a green leaf might look tan or gray.

Color Blindness Is Passed Down

Color blindness is almost always an inherited trait, which means you get it from your parents. You get inherited traits through genes which determine everything about your body, including how tall you'll be and whether your hair will be straight or curly. Eye doctors test for color blindness by showing a picture made up of different colored dots. If a person can't see the picture or number within the dots, he or she may be color-blind.

Boys are far more likely to be color-blind. In fact, if you know 12 boys, one of them is probably at least a little color-blind.

www.kidshealth.org



The colors of the rainbow as viewed by a person with no color vision deficiencies.



The colors of the rainbow as viewed by a person with protanopia. (**red**/green deficiency)



The colors of the rainbow as viewed by a person with deuteranopia. (**red**/**green** deficiency)



The colors of the rainbow as viewed by a person with tritanopia. (**blue**/yellow)



This Ishihara plate is designed to identify people with Protanopia (long wave red deficiency) and Deuteranopia (middle wave green deficiency). People with mild red-green deficiency will see 96, but people with Protanopia will see only 6. People with Deuteranopia will see 9 only.