

Q&A from the CEO of the company helping the colorblind enjoy fall foliage hues

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You have probably seen one of the many viral videos: Someone puts on a pair of normal-looking glasses, and they gasp, or break down in tears. Colorblind, for the first time they are seeing the range of contrasts in the

fall foliage, or the true color of a loved one's eyes.

The technology behind those revelations? Berkeley-based company EnChroma, which makes glasses that enrich [color](#) vision for the colorblind. Erik Ritchie is the company's CEO, and he shares his vision for the future of seeing in color.

Q: What is color blindness?

A: To an extent color blindness is a misnomer. There are very few people who are truly colorblind and only see in grayscale. Most people have what we term "color vision deficiency."

The eye has three cones that perceive color, they roughly equate to red, blue and green. The majority of folks that are colorblind have red-green color blindness, either the red or the green cone is deficient.

For folks who have color vision deficiency, there is an overlapping of colors. So greens look brown, reds look brown.

Q: How common is it?

A: It's really quite prevalent. One in 12 men, and one in 200 women.

For someone that's young and has color vision deficiency, oftentimes what is unfortunate is they are labeled as being slow learners. Lots of folks don't even realize they're colorblind, sometimes until [high school](#) or college. If it was known, they would be able to find ways to accommodate it.

The last we checked, only about 11 out of 50 states require testing for color blindness.

Q: For people who are colorblind, what other things can be difficult?

A: It affects them in lots and lots of ways, both big and small. If you start with school age folks, just think, everything in school is color-coded. From the teams, to the courses, to the games, to the crayons, everything is about color.

When cooking, is that steak that you're cooking raw, rare, medium?

Then in your [work life](#) there are presentations, PowerPoints, lots of the materials are color coded.

I was actually talking to someone who was trying on the EnChroma glasses for the first time. He was an audiophile, with lots of stereo equipment. And he said, "I can never tell if they're on or not, because the lights are always on, it's just whether it's green or red that tells me whether it's on or off." There's so much information that is just kind of lost.

Q: How is your company addressing this accessibility issue?

A: We have glasses, and those glasses really allow people to see a lot more color. Essentially, what they do is manipulate light coming through the lens, we pull those signals apart, so it reduces that level of confusion.

In addition to the products, we do a lot of advocacy through our Color Accessibility Program.

Q: What is the Color Accessibility Program? What

are some examples of work the program has done?

A: We work with [state parks](#), entertainment venues, museums all around the world, to enable them to be able to loan out our glasses to colorblind folks that come to their locations. This allows those folks to enjoy the art museum, the scenery, being able to see more color.

Then beyond that, we also work in school systems to be able to provide loaner programs. And we do a lot around education. We create these side-by-side images that show what a normal [color vision](#) person would see and what someone who is colorblind sees.

When parents see it, it really lands with them what their child who is colorblind is going through.

Q: You have been with the company for almost three years now. Can you talk about how you've seen it grow and change in that time?

A: We have expanded internationally, and we've come out with brand new lenses. We hold a number of patents in this space, but as the dyes and chemicals that we use to make the glasses advance, the actual lenses themselves advance, and we've been able to improve the performance. Over a previous generation lens, with the new lenses you get up to 35% better performance.

Then just this year, we've launched our brand new color blindness test. So the original test is the Ishihara test that was built back in 1917. We've now developed a new test, that allows us to actually test each one of the three cones in the eye that are used to perceive color.

Q: Can you talk about the future of the company?

A: There's much more awareness of the issue globally. There are 350 million people worldwide who are colorblind; 13 million just in the U.S. So we've only really scratched the surface.

Right now we're working on solutions to go into contact lenses. And we're working on solutions with lighting. And every year we do our Color Blindness Awareness Month, and this year there were over 400 institutions around the world that were participating.

We are a business. We are here to make money, but at the same time, and this is a big thing for me, I want to do something that does good in the world. So even if someone doesn't use my glasses, if we've been able to change that school district to do things that help accommodate a colorblind person, that's a win.

Q: You mentioned a lack screening for color blindness, and that your company has created a new online test. Where can people find that?

A: We did a research study a few years back and tried to identify how many states actually require testing at school age, and it was only 11 out of the 50. So we think that's not good.

We think it is something that you really need to be testing for at an early age. So that's one of the reasons we originally created our [color blindness](#) test. It's online, we offer it for free. Anyone can go online, take the test, identify whether someone is colorblind or not.

It used to be a paper-based test. So you'd have to bring a student in, put the book in front of them, they'd have to go through it all, and it takes a long time. Whereas with the online test, every device in that school is now capable of providing that [test](#).

And we're very hopeful now that this year the Americans with Disabilities Act, for the first time has included colorblindness as a disability, for which organizations and schools must now provide accommodation. This was just a few months ago, so it's really, really new.

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