Defy the Glare – Transitions XTRActive Polarized Lenses

Pete Hanlin, ABOM

Hello, my name's Pete Hanlin. I've been dispensing transitions lenses since they first came on the market in 1991. Now, if you'd have told me 30 years ago, this would become a product that was basically clear indoors and became a pair of polarized sunglasses. Outdoors. Never leave you yet. Here we are. And I'm really excited to talk to you about a new product from transitions, optical, transitions, extra active, polarized adaptive lenses. Let's find out what they're all about. Our learning objectives today are to recognize and understand the need that patients have for extra light protection. We've always been exposed to bright light when we're outdoors, but more and more increasingly, we are exposed to brighter and brighter light indoors. And so it's not surprising that you have patients that are noticing the effect that light has on their vision and their visual comfort. We're also going to explain the unique benefits that only a photochromic polarized lens can deliver. We all know the benefits of polarized lenses. We know the benefits of clear lenses, but when you combine the two, you really create a situation where you're controlling light in all conditions. And you're providing ultimate wear in visual comfort, no matter what the situation is. And then finally, we're gonna explain how this all works. How is it that you have a photochromic lens that becomes polarized outdoors and becomes clear and non polarized indoors?

I suppose a good place to start is what the concept that people day that wear glasses. They want more from those glasses than just vision correction. I mean, for hundreds of years, we've been able to make spectacle lenses that if you have a refractive error, yes, we can correct that. And we can give you back decent vision, but today people want more than just decent vision. If I'm gonna wear glasses, I to see colors sharper, I wanna see everything. I wanna be comfortable when I wear my glasses, no matter what the situation is and the spectacle lenses that we've been making for hundreds of years, do not keep you comfortable in all conditions. And today people want more from their glasses.

Market research really be airs this out. When you talk to eyeglass wears and you ask them, what do you expect? What would you like your glasses to be able to do for you? It goes beyond just clear vision. Yes, of course. I expect that, you know, the glasses I receive are going to get rid of my refractive error and allow me to actually see things, but not only do I want to see things, I wanna see things sharply and I wanna see things sharply, regardless of what the lighting conditions are, whether it's at nighttime or during the day, I wanna be able to see things sharply and in focus. I don't want to have to think about my vision. I don't want to have to deliberately focus on each thing I wanna see. I wanna see wide feels the view. What I mean by that is even when you talk to single vision wearers, single vision wearers will usually tell you, yes, my glasses help me see clearly, but I don't feel that I see as clearly throughout the entire lens as I should.

You know, my, my vision almost seems constricted and finally color. I mean, let's face it. We're all watching high definition TVs. Now that give us very vivid colors. When we watch movies and sports and everything else. And then we go out in real life and the color doesn't seem to be as vivid as it is when we're watching things on the TV. And we want our life to be as colorful as it is when we're watching movies. And when we're watching displays, we want our real life to feel as colorful as it can be beyond all of the visual quality aspects that consumers are thinking about. They're also beginning think more and more about the need to protect their vision. If one good thing has come outta the last two years, it's people are thinking more and more about their health. Now we can argue that people should have been thinking about their visual health for the past few decades, but increasingly people are noticing that, you know what, my eyes don't feel as comfortable.

And when you feel this comfort with your vision, you begin to think about, well, maybe I should be looking after the health of my eyes. And for that reason, really, and truly transition lenses should become the new standard for everyday optical lenses. What do I mean by that? What can protect your eyes better than a lens that the more light you're expos to the darker it gets? I live in Dallas, Texas, 12 months of the year when I walk outside, chances are it's going to be exceptionally bright out. And I'm someone that does tend to be light sensitive to begin with. So I notice right away when I go outside, it is way brighter out here than I need to comfortably. And so it's great when I'm wearing transitions lenses, that those lenses get dark almost instantaneously and they keep me comfortable. And I don't use the word empowered very often, but you know, I'd probably use a different word.

Like it makes me feel good or comfortable or satisfied to know that when I go outside, it's only a couple of seconds into being outside then to when my lenses start to get dark and I remain feeling comfortable. Now, if I was my kids, both of my kids happen to be millennials. And so they really worry about the appearance of their glasses. I'm beyond the age where I'm even concerned about how my glasses look, although I do like to look good, but I have to say that the colors that are available in transition signature gen eight have really been an eye opener pun intended for my kids because they can now wear a lot of different colors that I would've never imagined transitions coming in. When it launched 30 years ago, they can have their glasses looking green or Redish or blueish their glasses look good.

And you know, when I ask them, how do you feel when you go outside? You know what? I do feel more comfortable when I have dark lenses on, so your glasses can look good. They can help you see well, and they can help you be protected. And it's really effortless. What do I mean by effortless? I own over 60 pair of glasses, including five pair of polarized prescription sun lenses. And yet I cannot tell you how many times I walk outside the, my Jeep or I'm I just outside checking for the mail or something. And guess what? I don't have one of those five pairs of polarized prescription sunglasses with me. It's really nice when my glasses just automatically get dark and keep me comfortable for the time that I'm gonna be outside. Finally long lasting quality today, transitions lenses. They last much, much longer than the average lifespan of a pair of eyeglasses. In fact, they last longer than even your most unreasonable patient's expectation for how long a pair of glasses should. Last transitions are gonna keep doing what they're supposed to do for long after that patient should have gotten a new pair of glasses.

And really one of the things that sets transitions apart is the fact that their portfolio has two different types of products. So I've mentioned transition signature gen eight, it's available in seven colors gets pretty darn dark. If you've tried a pair of transition signature gen eight, they get dark transitions, extra active lenses get even darker. And that really sets transitions apart from pretty much any other photochromic lens on the market. You know, I, I go out and then one of the things I do here at Eure is I keep an eye on the competition and I see what the competition is doing with photochromic lenses. And it's almost like they're saying, Hey, guess what? We've the develop lenses. It can dark get dark outside, you know, isn't that great? And I'm thinking, well, yeah, transitions has been doing that for 30 years now. And if you want a lens that gets extra dark, your only option in the market is a transitions extractive lens. Not only do they get extra dark when you're outside, but they have just a tiny bit of tint when you're side. And that actually for certain of your patients, especially like me, that can make all the difference in how comfortable you are. Even when you're working in a work environment, that's indoors, or you're just home in a brightly lid environment.

So like I said, transitions, extra active it's that range of dark lenses. That's not found in anybody else's portfolio. And there's a few unique performance aspects of transitions, extra active that just make them a very interesting lens. They're the only photochromic lens that really significantly activates in the car. So even when you're inside of a car, they can get down to about a 50, 40% transmission, which if you're in a car and you're driving in the sun, that bit of tint is really gonna make you feel better. They block a hundred percent of UVA and UVB light V not good for your eyes. Not good for your eyelids. Not good,

basically for you in general and transitions, extra active lenses, completely block it. Also, there is no, if you are concerned about blue light and man consumers have become way more involved and inner in blue light over the last two years than I would've imagined, there is no single better lens on the market to protect you from blue light than a transitions, extra active lens when you're indoors and it's in its clear state, it's still blocking 35% of harmful blue light. When you go outside, that goes up to as much as 97% blockage of harmful blue light.

So let's face it. Light is essential. If we didn't have light, we couldn't see. But the fact is that we are exposed to far more light in our average lives. Then we really need to see comfortably. In fact, in a lot of situ we're exposed to too much light. And so we have to pick and choose the light that we want to see to be able to see things clearly and sharply, but not have too much light to make ourselves uncomfortable or even be damaging to our eyes. What do I mean by too much light? The chart that you're seeing right here is called a Luxe index. Now I want you to notice that 300 Luxe is about what you're experiencing in your house. Now that in itself is interesting because 20, 30 years ago, the average house had about a hundred Luxe indoors. So if you feel like you're exposed to more and more light would be correct, the average house is much better lit today than it was 20, 30 years ago.

The average office environment is also much brighter. I work for EUR. I can tell you, our headquarters has way more fluorescent lights than we really need. In fact, when I work in our head, if I'm not wearing lenses that have a little bit of tint, I feel it, it just, it makes me uncomfortable how bright it is now when you go to the supermarket gets even brighter. I mean, I don't know if you've ever been to one of those warehouses that just have those impossibly insanely bright lights overhead, but you are being exposed to more and you really need to see things. And then finally, even now, this is where it gets really interesting as much as we want to talk about our exposure to light indoors. When you go outside, things become just exponentially higher. Even on a cloudy day, you are going to have 10, 20, 30, a hundred times more light than you have when you're in an indoor environment. Even if you think your indoor environment is really well lit, it is nowhere near as lit as it is when you go outside. Finally, when you get into the full sun, you're looking at 20,000 to 80,000 LuxS that is far, far more than you need to see. Clearly. In fact, you are pretty much guaranteed to be uncomfortable. If you are outside on a cloudless sunny day, there's just more light than your eyes need to see. And your pupils can only get so small.

Now this over exposure to Luxe or to light, it reaches a pinnacle. When we talk about reflective glare, cause let's face it. Even when you go outside on a bright, sunny day cloudless day, you're not looking directly at the sun. I mean, unless you're a sun gazer, in which case we really need to talk, cuz that's super bad for your eyes. You're not gonna look directly into the sun. But when you see reflective glare, you are for all intents and purposes, looking directly into the sun. And the reason is that that reflection represents the full power of the sun being reflected off of the surface. And so even though you, wouldn't not truly look into the sun, when you see a reflection, you are in fact looking into the sun. That's why it is so uncomfortable. And so debilitating. In fact, you could call this reflected glare, all of this annoying light.

You could call it sight pollution. Now, to be honest, I had to look up the definition of sight pollution because at first glance, I thought it referred to shows like the Real Housewives of New Jersey, which my kids actually like that show. But that's not the sight pollution that we're talking about. We're talking about reflected glare. 30% of people actively notice that they are annoyed and and that they feel uncomfortable by reflected glare every single day of their life. So let's clean up this site pollution, and we're gonna do that because site pollution or reflected glare is challenging because it amplifies the quality of light. That's hitting the eyes. We don't naturally look at things that are super bright, but every once in a while in your daily life, even though you don't intend to a reflective surface gets angled just, just improperly enough that it's going to reflect that sun right into your eyes.

And when that happens, it's concentrated, it's dazzling and it becomes so bright that you moment voluntarily lose vision. In fact, you can lose vision for quite a little while. If you've ever had like a flash ball go off in your eye, you know that you get that blue spot right in the Manu, your vision what's happened. All the adoption has been sucked up. And so your eye has no more chemical to see. And when you see reflected glare and you're driving along well, you've got that little spot in your vision now that you really can't see very well out of, and it is distracting. It is annoying and it can be dangerous, very bright, light, especially sunlight, something that we experienced throughout the year. I, I don't care if I, when I was born and I was living in Pennsylvania, we still have cloudless days in the middle of winter where you're driving along and there's snow all over the place. And you get some reflected light that just it'll blind. You, even though it's, blisteringly cold outside, you're going to be exposed to blinding glare and sight pollution.

So what we know about very bright light is it can generate eye fatigue. If you are an environment where you are exposed to bright light constantly, or for very large periods of the day, it can actually make your eyes feel fatigued. For example, even if you're 20 something years old and you are a lifeguard, and for some reason you are not wearing sunglasses. We know that that fatiguing of your eye can actually lead to night blindness. So even if you're in your twenties, your eyes are super healthy. If you're exposed to bright light, all day, what's gonna happen is your eyes chemicals that it uses to see. They get drained all day long. You never build up a reserve. And so when nighttime comes, you find it very difficult to see in dark conditions. Another thing studies have been done that show that you don't have to have ultraviolet light light, even you don't even have to have harmful blue light.

Even if you're just talking about visible light, extreme excessive amounts of visible light are not good for your retina. You are overexposing those retinal cells and they can get damaged. Your crystal lens can get damaged. Your cornea. You can at dry eye from just being exposed to excessively bright light all day. And then also what we know about bright light is like I said, that momentary blindness that you get, you just can't see anymore. I've got one road on my way home from work. That for whatever reason, it must be west facing because when I'm coming home in the evening, it is facing right into that sunset. And I know that you've probably experienced this yourself sometimes where there's just that one road, the one time of day, you're headed directly into the sun. And it is just impossible. I mean, you're putting your visor down. You're putting your hand up. You're trying to see because there is just way, way, way too much light.

So the other thing, as I've mentioned, several times is harmful blue light beyond just visible light in general, there's a certain range of visible light, right around 435 nanometers. That is just not very good for your eyes. Harmful blue light have a whole course on it. Let me just summarize it by saying that the damage that blue light causes is oxidative in nature. There is some debris that builds up in your retina and harmful blue light, right around hundred 35 nanometers, which is blue violet and color. It oxidizes all of that debris in your retina. It can turn it into just garbage. That's like a fatty substance that can eventually disrupt your vision and disrupt the health of your eyes. 61% of people are saying, Hey, I'm spending more time on screens than before the pandemic. Well, of course you are. Everyone's working from home. Everyone's inside, I'm in front of a screen 8, 9, 10 hours a day.

Now hopefully your patient beyond the fact that they recognize that, Hey, I'm spending more time in front of screens. Really? The thing that's gonna whack your eyes is the sun. So when it comes to blue light, you know, if I'm, I'm sure you've probably heard about blue light for years now, to be honest, sometimes I'm tired of talking about it, but the problem is that in the sun, you are being exposed to enough blue light to really damage your eyes, your electronic device. Yes. It puts out the same harmful blue light, but it put it's out a lot less of it. And the analogy I like to use is smoking. Everyone knows that smoking is bad for you. If you're smoking two packs a day, well, you're probably gonna have health problems. What we don't know, if you think about it is smoking one cigarette a day harmful for you.

Is it going to cause health problem problems? We don't know if smoking one cigarette a day is gonna cause health problems. And that's really what your electronic devices are like. They're that one cigarette a day. It's something that we know will harm you in larger doses. We just don't know if the dose that an electronic device puts out is really gonna harm you. Well, the good news is a transitions lens is going to block. If it's a signature gen eight, it's gonna be 20% of harmful blue light is blocked. Even when it's clear with a transitions, extra active product, you're gonna block 35% of that harmful blue light, even when you're just in, inside in front of your computer screen. But the magic and the beauty from a health perspective of trans lenses is when you go outside, you are gonna be exposed to a hundred to 500 times more light, including harmful blue light from the sun than you're ever exposed to indoors.

And the beautiful thing about transitions is it automatically gets darker. If you're wearing a, a, a blue filtering lens that is perfectly clear and stays clear. Let's face it. When you go outside, reducing that harmful blue light by 20%. Well, I guess that's better than nothing, but you need more protection against harmful blue light. When you're outdoors than a clear lens can provide beautiful thing about transitions. Lenses is if you're wearing transitions, extra active, those lenses are gonna block 90 to 97% of the harmful blue light that you're exposed to outdoors. And the studies that have been done that have proven that harmful light can in fact, contribute to macular generation. That level of exposure is always outdoors. So we know that the sun can damage your eyes with blue light. We don't know if electronic devices can. We know that you're being exposed to more harmful blue light indoors than you used to be. We just don't know if the small amount of harmful blue light that electronic devices put out is enough to really damage your eyes. Great news with transitions, you're protected in both situations, you're receiving less harmful blue light from your electronic devices. You are receiving a lot less harmful blue light from the sun, and that's the light that we know can damage your eyes. The other light ultraviolet, we seem to of forget that these days transitions lenses, even when they're clear, they block a hundred percent of UVA and UVB light. So your eyes are protected.

So blue light and UV blue light, like I said, is potentially harmful to the retina. The reason is oxidation. Ironically, it's the same reason that smoking actually causes health problems because nicotine and other chemicals that are found in cigarettes, they cause oxidation throughout the body oxidation, look it up. It's a bad thing. It causes your cells not to reproduce quite accurately and it can lead to all sorts of problems. Including cancers in the eye. Oxidation causes is the, the buildup of a fatty substance called lip fusion, which eventually can contribute to macular degeneration. UV, as we've known for years now can contribute to cataracts. So the beaver dam study the Waterman study. They definitively linked sunlight and the UV withins sunlight to cataract formation. If you're exposed to more sun, you have a better chance of getting cataracts and you get a, a better chance of having sun blindness, like photo caretitis.

If you've ever gone skiing out in the snow and you didn't wear dark lenses, you got exposed to a lot of ultraviolet light. And within a few hours of coming in your eyes feel very uncomfortable. In fact, they can water up and you can't even see anymore. That's just basically a sunburn on your cornea. So transitions lenses are gonna protect you from these blue lights and ultraviolet light polarization. It's the only really effective way to get rid of reflected light. What I mean by that is reflected light, like I said, is basically staring directly into the sun. So I want you to think about that. If your approach to that is just a regular tinted lens, you would have to tint that lens, possibly dark, to be able to look directly in the sun. In fact, you can't really look directly in the sun, even with the darkest tint, because you're still gonna be exposed to infrared light, but when it comes to reflected light, you can't make the lens dark enough to dim down that reflection of the full power of the sun. You need polarization, which selectively filters out the blind and glare.

So transitions, extra active. It's a new product in the extra active range, because even the regular transitions, extra active product, it has a new generation it's even, and darker. Now it gets clear faster.

It's just an overall better product transitions, extra active polarized takes this another step further. It's a lens. That's almost clear indoors. You go outside, it gets super dark and it's very effective as a polar lens. So transitions extractive, polarized. It protects you from the intense, bright, light and reflective glare. Any tint that you can wear will basically tone down the sun and make you a little bit more comfortable when you're outdoors. But what a regular tint will never do is tone down the reflected glare of the sun. Because like I said, it's like, you're looking directly into the sun and a regular tint can never provide comfort. When you see a reflected image of the sun, a polarized lens can preserve the comfort and the health of your eyes, even when you see a reflection because it's so collectively gets rid of that reflected glare.

So how effective is transitions, extra active, polarized lens as a polarized lens? What do I mean by effectiveness? Well, when you have a polarizing film, you talk about its polarizing efficiency. In other words, how much of that reflect did horizontal glare is that filter going to get rid of, and typically in a pair of fixed tints. So in other words, sunglasses that are polarized polarized sunglasses are usually around 90, 93% polarizing efficiency. So that polarizing film is getting rid of 90% of the horizon, a reflected glare transitions, extractive, polarized is right there with it. So when you go outside in a pair of transitions, extra active, polarized lenses, they are gonna perform basically like a regular pair of polarized prescription SunWare. So you're getting the benefit of polarized glasses in lens that's adaptive. So it's clear indoors. You go outside, it gets extra dark transitions.

Extractive. New generation has been out long enough that when I go out and talk, I bump into opticians that have worn transitions, extra active, new generation. And one of the things that they always mention is, wow, these lenses get really, really dark. I know in the past, we've never really tried to call transitions a sunglasses lens per se, but transitions, extra active new generation. It gets really dark. Like I said, I'm pretty sensitive myself. And I like my sunglasses to be really dark, new transitions, extra active, new generation lenses. They get really dark, dark enough to where I say, yes, this is a good sunglasses for me with transitions, extra extractive, polarized. Now I have a sunglasses lens that's polarized. And so it's great pair of glasses. I really think this is gonna be an amazing product. Whenever people start realizing just what kind of performance it provides.

Other thing is like I said, it activates and darkens in the car. So you're not gonna get the full darkness that you would get outdoors with transit extractive, polarized, but when you're in the car, you're still gonna get a 40, 50% tint. And that's pretty significant. That's at least dark enough to keep me pretty comfortable on a sunny day when I'm driving my car. Now, let me just give you one little hint. If you want your transitions extractive, polarized, or your transitions active new generation lenses to get as dark as they're gonna get in the car, give them a chance to activate before you get in the car. Because as we're gonna see, the reason that transitions extra active is such a unique product on the market is it responds to the light that comes through the windshield. But what I've found is if you can get the at lens dark and then get into the car, it will stay darker than it might have gotten.

If you just got into the car and the lenses were clear. So in other words, if you live in an area where you have a garage and you walk straight from the house into the garage and it's dark, you get in your car and then you wear your sunglasses. Well, it gonna take a little while for that lens to respond because there's not as much of the UV light coming through the windshield. The way I usually take care of that is I just roll my window down for a second. Look into the sun for a couple of seconds and close my eyes. Of course, lenses get super dark because one of the things about transitions, extra active, it gets dark except. So just give it a few seconds in the actual sun to get dark, then drive your car. And you're gonna find that they stay pretty darn dark whenever you're driving the car only photochromic lens on the market.

That does that other beautiful thing. Yes, they get outside, but here's what a transitions extractive polarized lens does that a regular polarized lens cannot do. It gets clearer indoors. So this lens, it's not perfectly clear indoors, but it is pretty darn close. And really, and honestly that little bit of tint that is left in the lens makes me so comfortable when I'm under fluorescent lighting. I can really tell a difference when I'm wearing my even transitions, extra active lenses versus transition signature gen eight lenses. If I were your patient, I would hope that you would let me know about both products because in all honesty, I much, much, much prefer my transitions, extra active lenses to my regular transition signature gen eight lenses, because I am one of those people that is very light sensitive. Now also I'm a person that happens to be a technical optician.

So I get a lot of troubleshooting emails that roll into ER's. And at least once every couple of weeks to once a month, one of y'all sends me an email saying, Hey, my patient is wearing their polarized sunglasses. And they're noticing that their computer screen looks really funky. Now my first question that always pops into my head. If I'm honest, is why are you wearing polarized sunglasses to use a computer, but the reason, and if you've ever had a patient, I'm guessing you probably have, if you've ever had a patient, that's complained about polarized sunglasses and computers, you know, oh, there's something wrong with these sunglasses, cuz it makes my computer look really weird. Well, the reason for that has to do with the letter C most laptops have L C D monitors. The C in LCD stands for liquid crystal display. And the crystal part of an L C D screen means that the light coming from that screen is in fact polarized.

So when you have a polarized lens and you look through another polarizing filter, like a computer screen, you are creating something called a Polaris scope. Now for those opticians that are really, really old like me, you might remember the days of glass. When we made glass lenses, we would put them under a Polaris scope to make sure that they had been tempered. And you would see stress patterns within the lens. Usually look like a cross right in the middle of the lens. Well, when you wear a polarized pair of sunglasses and you look at an LCD display, you are going to see those same patterns of stress and polarization. It's not an optical error. It's just something that's there. And polar rise lenses. Cause that problem transitions extra active, polarized lenses are not gonna cause that problem, assuming that your indoors, when you're using your laptop, those lenses are gonna get clear.

And when the lenses get clear, they do not have polarization. So I'm looking at my computer screen right now. As I'm giving this presentation, I'm wearing transitions extract, extractive, polarized screen looks perfectly fine. It's like I'm wearing an ordinary pair of clear lenses. So in some respects, transitions, extractive, polarized is gonna be a superior solution to outdoor vision. Then even polarized prescription fixed tint, sunglasses. Other thing is they fade up to two times faster. Now we're gonna see why in a couple of slides, there's some technology that's transitions has come up with that allow these lenses, both signature transition, signature gen eight and transitions extra act to get clear faster. So when you come indoors, yes, you have your nice polarized sunglasses outdoors. You come indoors. Those lenses are gonna get clear very quickly.

As I've mentioned, several times transitions, extra active lenses also provide the best overall protection from blue light harmful blue light. The reason is that little bit of tint that is still left in a transitions extractive lens. When you're indoors, it happens to filter about 35% of harmful blue light. So if you have a patient, the, that has a history of AMD in their family, or maybe the doctor has mentioned that they are seeing a little bit of drusen or some sign of early macular generation. You wanna put a patient in transitions, extra active lenses because they are going to filter a ton of harmful blue light, even when they're indoors. And, and like I said, the beautiful thing is when they go outside in the sun, that pumps out tons, more harmful blue light, those lenses are gonna get dark and protect the patient from 95 to 97% of that harmful blue light outdoors as well.

While we're on the subject gonna take a side road real quick here. This is just a trigger issue with me. The type of patient that you want to talk to about transitions, extra active and extra active polarized lenses is patients that have had cataract surgery. Now, the reason I'm mentioning this is cataract surgery is the most common medical procedure done in United States. Each year, 3.6 million people a year in United States get cataract surgery. What most people don't realize that inocular lens that they're putting into your eye to replace your cataract lens in over half of all of those 3.6 million surgeries. That lens is super clear. It is clear than the lens that you were born with. Now, the reason that I'm mentioning this is that as you age, even if you don't get a cataract, your crystal lens naturally begins to have a tint. And that tint specifically tends to filter out harmful blue light or in other words, high energy visible light.

So the reason for that is as you get older, your eyes' ability to handle oxidative stress caused by blue light diminishes. You're not as good at handling the damage of light as you get older. Well, that's fine because in nature, your lens just gets tinted. So you don't get exposed to as much harmful for blue light. But when we have cataract surgery, in most cases, they take out that tinted lens, the natural lens, and they put in a perfectly clear lens and there's at least one study that's been done that shows that if you receive a perfectly clear IOL, your chances of getting macular degeneration go up and the reason is your eyes now being bombarded by all of this harmful blue light, that shouldn't be striking an older retina transitions, extractive, polarized, and extra active lenses are going to replace that natural filter that most people build up as they age.

So if you co-manage a lot of cataract patients, you want to mention to them after they've had their cataract surgery and they're all happy, cuz they can see colors now and everything's more vibrant. Yeah. The reason you can see colors so well is because when the doctor took out that cataract, they removed your naturally tinted lens. But by doing that, they're also exposed your eye to a lot more light that in nature, it wouldn't naturally being, getting exposed to at your age. So we wanna replace that protection with transitions, extra active lenses. They're going to filter out the light that your eyes naturally would have filtered out. Had you not had cataract surgery? Sorry for the side. But man, that one's super important to me. I've got relatives that have had cataract surgery and every single one of them, I pester them until they wear transitions, extra active lenses.

All right, now transitions also did a polarization study. So for 12 of months they followed people around and they asked them questions and they discovered what it was about polarization that enhanced their vision. Number one was sharper vision. So actually we've run some studies here at EOR two. If you're wearing a polarized line, your vision will be measurably sharper than it is with a regular standard tint. We're gonna see why in a couple of slides, but suffice it to say that when you give your patients polarized lenses in general, you are giving them better vision outside. Now I'm going to guess that a lot of you that wear prescription, you have a pair of prescription polarized sunglasses. And I always like to say that if you wanna give an adult that wow experience give them polarized prescription sunglasses. Cuz when you go outside, you're like, wow, I see better than I've ever seen outside with these polarized lenses. There's a reason why you're seeing sharper because you are in indeed seeing better contrast and you're seeing better colors. See why in just a moment.

Now the other thing that polarization does or the other thing that's noticeable, the wearers of polarized lenses is that you get a larger view. Now what in the world could polarization have to do with having a larger field of view? Well, here's what it comes down to when you're outside. Anytime you see a bright light, even though it might be annoying to look at bright lights, you can't help yourself. Your eye is just tuned to search out light. And so I noticed this the other day I was flying into Dallas Fort worth airport and I was looking out the window and the sun was setting. And I noticed that every time we, you know, passed over in just the right area pond or something like that, of course it was reflecting the setting sun and it was annoying as heck. I couldn't help it. Every time that little flash of light would occur, I would find myself looking right at it.

Well, when you wear polarized lenses, that flash of light is actually filtered out. And so effectively what happens is you get a larger field of view because you're not always looking directly at bright light, that's causing you to wins and to squint. And so the effect is it feels like you have a broader field of view because you're not constantly looking at light. That's annoying. So polarization gets rid of those flashes of light that the eye just can't help itself from looking at finally use, see colors better. And that's actually not just the perception that you have. That's the reality. Like I said, you see sharper. And part of the reason that you see sharper is you see colors better. So why is it that polarized lenses allow you to see better contrast and better colors? Well, the reason has to do with pollution and we're not talking about out light pollution anymore.

We're talking about pollution pollution. So in the air you're gonna have haze that haze actually reflects light as well. And so remember I said that when we look at the television screen, we see vivid colors and vivid images that sometimes in real life, I don't know if you've ever gone to like a football game, but I go to the football game and I'm looking at the, the players and I'm like, wow. On the TV, the greens look a lot greener and everything looks a lot brighter and more vivid. Well, the reason is because in that stadium, you're gonna have haze and you're looking through that haze, but some of the cameras that you're looking through, when you're looking at a sporting event, they actually have of slight levels of polarization to get rid of the haze. And that gives you the sharpest possible transmission and your eyes are no different. When you wear a polarized filter, you look through the haze because you're no longer seeing all that horizontal reflected light that's coming off of the haze, that's in the air. And so you see things sharper. And part of that is you are going to see colors more vividly. So polarization is basically a good thing. If you're gonna be outside, you wanna be wearing polarized lenses.

So the way this is all accomplished by transitions, it has to do with over 400 patents. Now patents are interesting things. When you come up with a new idea and you patent it, basically that means that no one else can use the same approach to do what you're doing. And so while there may be other photochromic pro on the market, they can't do it in the same way that transitions does at least for 20 years. That's how long a patent lasts. So when you patent the new technology, you have 20 years to use that technology and no one else can use it. 20 years later, you can start to use that technology. So products that aren't under the patent are gonna 20 years behind the people that came up with the patent. What do all of these patents have to do with a lot of 'em have to do with the dyes themselves. Some of them as we're gonna see is some of the concepts that transitions has come up with to create a better environment for those dyes. And then of course there's a lot of patents that are gonna have to do with the fact that these are polarizing, cuz that's a pretty unique feature.

So like I said, some of the patents have to do with the environment that you're putting these dyes in now with transitions, signature gen eight and transitions, extra active new generation, and now transitions extra active polarized part of the thing that makes these lenses get dark so quick and then get fade back to clear. So quick has to do with a multi-layer matrix. What in the world is that? Well, polarizing are photochromic materials. Photochromic dyes that change color. They do that by changing their shape. So the molecule actually goes from being folded in on itself to becoming flat. So every time a transitions or any photochromic lens gets dark, it's got to change the dye shape from being folded, to being flat and then to become clear again, that dye has to be going from being flat to being folded in, in itself. If you think about that, if the dye needs to be able to move, maybe you should give it an environment to live in where it has more space to move. And that's what this matrix is talking about. Transitions has come up with a coding that the transitions dies live in that have space between the molecules. And that gives those dyes the ability to very freely change shape. That means that they get darker quicker. That means they get clear quicker. So that is why transition signature gen eight transitions sign transitions, extract extractive and extractive. Polarized lenses are getting dark quicker in getting clear quicker because the environment that the dyes live in, allow them to change shape quicker.

Now we also have improved the dyes. When I say we, of course, I mean transitions, but as someone that works at Essilor, I'm very happy that transitions is part of our family. The transitions extra active dies in particular are very interesting. The reason that most photochromic lenses will not get dark inside of a car is because most photochromic dies. Only react to ultraviolet light. And of course a windshield filters out ultraviolet light. So for most of your photochromic lenses out there, they cannot get dark inside of a car for a couple of reasons. Actually, first of all, the windshield of the car is getting rid of the ultraviolet light that causes them to get the second reason why you'll notice photochromic lenses tend to get clear so quickly in a car. The thing that makes a photochromic lens get clear again is not removing ultraviolet light.

It's actually the application of heat. So if you're in Texas or Florida or somewhere else like that, where it tends our Arizona, where it gets very sunny, it's also tends to be very hot. So when you have a perfectly darkened pair of photochromic lenses and you get inside of your car, two things are happening. You're removing that ultraviolet signal, but you're also exposing the lens to tons of heat. So you're removing the signal that causes the lens to get dark. And at the same time, you're exposing it to the signal that causes the lens to get clear. So if you want your lenses to fade back super duper quick, get into a hot car with a lens that doesn't react to visible light, well transitions, extra active lenses. The reason that they get dark inside of the car is because the dyes not only respond to ultraviolet light. They also respond to shortwave visible light. And so of course, some of that visible light is making it through your windshield. That's the reason that transitions extra active lenses can get dark inside of the car.

Now, the reason that they get polarized is because DIIC dyes. What in the world is a DIIC dye. It's a dye that not only does it get dark and light, again, not only can it change shape, but it's organized in a way where it's in a line. So most dyes are just random. They're just scattered all over the place. But when you have a DIIC dye, it actually is arranged just like a polarizing film. The dyes are all lined up in lines that whenever that lens activates, it not only gets darker, but it also starts to polarize light. In other words, DIIC means that it treats light at different angles differently. And so horizontal light is going to get filter heard out by the DIIC dyes that are in a transitions, extra active, polarized lens.

So transitions extractive, polarized. Who are they for? You know, transitions is gonna tell you they're for people that are particularly light sensitive or people that just, you know, need that active outdoors polarized experience. To be honest, I think they're gonna be for a lot larger percentage of the population than we think because who doesn't want to have polarized prescription lenses when they go outside, this is a new opportunity to give your patients a lens that not only is clear indoors and maybe even helps them out in their office environment by cutting down that fluorescent light a little bit. But man, you go outside and you have a polarized prescription sunglasses lens. Now this is one last thing I wanna really address. I've heard some people say, well, if I, this spend transitions, I won't sell as much polarized prescription somewhere. Actually studies have shown that offices that have higher penetrations of transitions, they actually sell more polarized sunglasses.

I have a theory as to why this happens. If your patient has never worn polarized prescription SunWare and most haven't the, the United States sells more polarized lenses than any other market. It's one thing we do really well and still only one out of 15 people that wear clear prescription glasses, only one out of 15 have polarized prescription glasses. They've never experienced them, but of course, if you've worn polarized lenses outside, you know, you would never wear sunglasses that weren't polarized. So now here's what happens. You give your patient or you dispense a pair of transitions, extract, extractive, polarized lenses. Your patient goes outside. And perhaps for the first time they have a prescription polarized sunglasses and they go, wow, this is amazing. Then they get in their car and they're like, wow, this is still comfortable. But I wish that I could have a lens that was perfectly dark.

Even when I was driving. What's the only way to do that. Buy a pair of prescription full-time polarized sunglasses. So by selling and dispensing and recommending transitions extract of polarized, you are actually going to addict patient to having better outdoor vision for the first time, perhaps in their life. They're gonna experience the vividness of polarization in a prescription lens when they're outside and they're gonna want more and more of that, perhaps they're even gonna want a full-time pair of polarized prescription sun lenses when they drive their car. So transitions, extractive, polarized. I think it's gonna be for a lot of people. If you have a patient that wants to have comfortable vision, indoors and comfortable vision, when they're outside, this is the perfect lens.

So just in the way of a recap, transitions, extractive lenses, they get extra dark. If you worn or seen transitions, extractive lenses in the past, be prepared for a noticeably, even darker lens. These lenses get dark, dark enough to impede Hamlin. And I support this message. They get dark enough for me and I like dark sunglasses. So they're not only gonna get dark, but even in blisteringly hot temperatures, cuz remember I said that heat causes photochromic lenses to deactivate. So a lot of these lenses on the market say, Hey, I get clear really quick. Yeah. That's because they're exceptionally sensitive to heat. So if you're in a 95 degree Dallas day, well forget 95 degrees, 103 degree Dallas day, or you live in Arizona. A lot of these photochromic lenses will not get as dark as they should transitions. Extra active lenses are going to still get super dark.

Even on blisteringly hot days, they're gonna have 90% polarization efficiency. They are basically a pair of polarized prescriptions sunglasses. They're gonna get clear faster than they ever have before twice as fast to fade back. So when you come back inside, you're gonna lose that polarization. You're gonna lose the tint. It's gonna get clear. And you're gonna walk into that meeting and people are like, okay, you got clear glasses on. You go outside. And you've got prescription polarized sunglasses on. That's pretty darn cool. Finally, we're gonna block a hundred percent of that ultraviolet light. And if you have concerns about harmful blue light, you can do no better than to wear transitions, extra active or transitions, extra extractive, polarized lenses, key takeaways.

Well sell 'em. That would be my key takeaway. If you wanna give your patient the best overall vision that they can have in all environments at all times, transitions extract, active, polarized lenses, you can't beat 'em no matter what situation you're in, you are gonna have the most comfort that you can have. You're have the best protection for your eyes against harmful blue light and ultraviolet. I, I just quite honestly cannot imagine how transitions extract of polarized lenses are not gonna become wildly popular. The few people that I've met that have already had the opportunity to try them love them. I've seen a pair and you know, I've got the transit extra active new generation, which I already love polarized is gonna be my favorite lens going forward. I can't imagine making a pair of glasses that doesn't have transitions, extractive, polarized in it. So yeah, I've probably oversold that, but yeah, I really like this product. So thank you so much for taking a few minutes to learn about this new product. I hope you're as excited about it as I am and happy dispensing and go give your patients better vision.